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ABSTRACT

This volume constitutes an updating of a survey carried out five years ago concerning educational research policies in member states of the Council of Cultural Cooperation. Countries whose educational research policies are assessed include Austria, Belgium, Cyprus, Denmark, Finland, France, Ireland, Luxembourg, Netherlands, Norway, and Spain. For each country, the volume includes information on the role of research, general framework of the educational research system, and future development. Regarding the role of research, information appears concerning such areas as the relationship between researchers and policy-makers, the relationship between researchers and the schools, and cooperation among researchers and among institutions. Regarding the general framework of educational research, material is included about such aspects as promotion, planning, and financing of research; expenditures on educational research and development; priority fields of research; and research dissemination and impact. Information on future developments concerns trends that may change research policies and projected cooperation among European nations. (Author/JM)

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EDUCATIONAL RESEARCH POLICIES IN EUROPEAN COUNTRIES

1978–79 SURVEY

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INTRODUCTION

In 1974 the Documentation Centre for Education in Europe published a survey of educational research policies in member states of the Council for Cultural Co-operation. This present volume constitutes an updating of the survey carried out five years ago. Both publications result from the request made at the Fourth Conference of European Ministers of Education in 1964 that the Council of Europe should "set up a service which would be responsible for collating and distributing information on educational research carried out in the various countries signatory or adhering to the European Cultural Convention".

The country reports were based on the questionnaire which appears below.

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the national education system which affect the role that educational research plays in it.

1.2 To what extent do researchers co-operate with decision-makers (parliamentarians, senior officials, etc.) in the preparation of educational policy at the national level ?

1.3 To what extent do researchers co-operate with teachers, administrators and parents in the development of education at the local level ?

1.4 To what extent has research contributed to reform in specific fields of education and to innovation in the classroom which may be adopted generally ?

1.5 What are the main obstacles that prevent a greater impact of research on the classroom ?

1.6 Experiments: co-operation of researchers in the design and evaluation of experiments; links between institutions carrying out such experiments and research organisations; innovation by teachers and participation of researchers in such innovation; the role of researchers in the generalisation of successful experiments; etc.

1.7 When and to what extent are student teachers and practising teachers familiarised with educational research ?

1.8 To what extent has research been able to contribute to rationalisation and cost saving in the provision of education ?

1.9 What has been the role of educational research in study reform and re-organisation at the post-secondary level ?

2. GENERAL FRAMEWORK

The authors of the national contributions are requested to answer the following questions as far as applicable.

2.1 Promotion, planning and financing of educational research and development at the national level (or the level of Länder, cantons, etc.)

What machinery exists:

(a) to stimulate and promote educational R & D ?

(b) to plan and/or co-ordinate educational R & D ?

(c) to finance educational R & D ?

2.2 Expenditure on educational research and development: Are figures regularly available on actual or estimated total national expenditure on educational R & D ? If the answer is "yes", please indicate the percentage of total educational expenditure devoted to educational R & D in the last two years.

2.3 Priority fields

Are there priority fields for educational research and development that have been or will shortly be promoted ?

If so, please indicate:

(a) what these fields are,

(b) why and how it was decided and who took the decision to give priority to them,

(c) any special measures that have been taken to promote R & D in these fields (eg financial measures),

(d) how any measures taken so far have affected the fields concerned.

2.4 Dissemination of information

(a) How is educational research information disseminated amongst researchers ?

(b) How are administrators and teachers in the classroom made aware of relevant educational research findings ?

(c) How is feedback from the researchers, administrators and teachers to the main educational research organisations ensured ?

(d) How far is research information disseminated to the public at large and to specific groups (eg parents) which may be interested in the findings ?

2.5 Impact of research on educational development and innovation

(a) Are there any particular stategies for implementing educational research findings and promoting research-based development and innovation ?

(b) What experience has been gained so far with such strategies ?

3. FUTURE DEVELOPMENTS

3.1 Are there any trends or new measures under consideration which may change the present structure of educational research policy in the near future ?

3.2 Recently new forms of intensified European co-operation in educational research and development have been under study in international organisations. What, in the opinion of your government, should be the main programmes and procedures for such co-operation ?

AUSTRIA

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the Austrian education system which affect the role that educational research plays in it

The Austrian education system (with the exception of scientific institutions of higher learning and academies of fine arts) acquired a new basis with the School Organisation Act of 1962. In the same way, the General University Studies Act of 1966 provided a new legal framework for institutions of higher learning. Both Acts have served as "go-ahead signals" for further reforms.

The Austrian education system is to a high degree under the jurisdiction of the Bund, this being especially true for the areas of higher and secondary education. At the same time, the federal character of Austria's administration is seen in the dual control of compulsory schools by the Länder and communities. It should be mentioned that the Bund is responsible for school organisation, curricula, timetables, examination regulations, determination of the maximum number of pupils per class and also for teachers' salaries. Länder and communities only maintain buildings and facilities in the compulsory school sector. As mentioned above, universities and institutions of higher learning are maintained by the Bund - that is, by the Federal Ministry of Science and Research.

The Austrian education system is at present being reformed. On the one hand, areas which lay outside the realm of formal education (for example, adult education) or which had not been taken sufficiently into consideration (for example, pre-school education, which is now, like the kindergarten, the responsibility of the Länder) are to be brought to some extent into harmony with education in the schools. For instance, the inclusion of pre-school education and adult education as subjects in teacher-training curricula is at present under discussion. So too are pre-school experiments more broadly based in conception.

On the other hand, broadly designed school experiments have started in accordance with the 1971 fourth amendment to the School Organisation Act. These are to test comprehensive school models for 10 to 14 year olds where differentiation is made according to performance, and where both advanced instruction and remedial teaching are provided.

Moreover, a bill is awaiting consideration by parliament which would progressively regulate the question of democratisation of schools and of pupils' responsibility. The expansion of both lower and upper secondary and different forms of vocational school enjoys the greatest priority in order to meet the demand of the society for higher professional skills and qualifications of the school leaver.

In a planned fifth amendment to the School Organisation Act, a legal framework for experiments in vocational schools would be provided.

The present trend in higher education reform is to determine afresh the duration of studies, the number of examination subjects, the relation between levels of advanced studies ("Diploma" and "Doktorat" studies), and, at the same time, to make it possible to regulate the microstructure of the studies - that is, the relative importance of examination subjects and the didactically correct sequencing of lectures - by passing laws for the different areas of study (most have already passed through parliament). In connection with these laws (dating from 1969), "Study Commissions" (Studienkommissionen) composed of professors, assistant professors and students with equal voting rights were created.

Innovative legislation in the field of higher education has led in 1975 to the University Organisation Act. This law aims mainly at an improvement and rationalisation of the traditional university structures. At the same time, provision has been made for the democratisation of relations between university teachers and students.

1.2 Co-operation between researchers and decision-makers

There is a high degree of co-operation between researchers and research institutions on the one hand, and governmental authorities and parliamentarians on the other. With the foundation of the University of Education in Klagenfurt a specific research institute was established to broaden the range of basic educational research. Such research is also being carried out in other university institutes. The co-operation between these research institutes and the Federal Ministries of Education and Art, and of Science and Research respectively is demonstrated by the fact that many research projects are being carried out at the request of these ministries. The same is true of non-university research institutes which have also been requested to undertake research projects in education.

A characteristic feature of the present situation is that research and development in the school sector is under the Federal Ministry of Education and Art. Under the Ministry of Education and Art, a specialised "Centre for Experimental Education and School Development" was established, devoted to the co-ordination, planning, scientific control and evaluation of school experiments. The interest of the Ministry of Education and Art in the results of basic educational research is also demonstrated by the fact that a sub-committee of the Ministry's School Reform Commission (its members include administrators, parliamentarians, representatives of teachers, parents and pupils, and educational researchers) proposed a documentary survey of educational research in Austria.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents

As mentioned in para. 1.1, the Austrian school system is to a high degree under the jurisdiction of the Ministry of Education and Art, that is to say that all pilot experiments and all major innovative research projects can only be carried out in close co-operation with the Federal Ministry. This does not mean that teachers and parents do not co-operate in these pilot experiments. The role of teachers in individual pilot schools is very important; at the same time they are very active in drafting the curricula for experimental schools. Research projects are, however, centrally guided, when they are not undertaken by university institutes or independent research institutions.

1.4 Contribution of research to reform in the classroom

The importance of educational research for the innovation process is recognised in Austria, hence the foundation of the University of Education in Klagenfurt (see para. 1.1). However, it is at present too early to look for instances where educational research has had a direct impact on school and university education. Austria is in the initial stages of development in this field. The Austrian school and education system is at present undergoing a reform in which a great number of proposed models are based on the results of basic research.

As already mentioned, the purpose of the different reform models (eg comprehensive schools, new forms of top level secondary general schools) is to test out and to assess the applicability of research findings to the educational process. Care is taken that the teachers are especially well-guided by advisers who are members of curriculum development groups (one for each subject, consisting of highly qualified teachers and a university professor as adviser). Furthermore, provision is being made for in-service training programmes for teachers on a voluntary basis. The purpose of this programme is to confront especially top level secondary general school teachers with the most recent research findings.

The feeling that educational policy decisions must be based on factual up-to-date material has led to significant results. In both the Ministry of Science and Research and that of Education and Art, the statistical departments have been expanded. This has provided important information for planning purposes. For example, a pilot model for the evaluation of data on student enrolment and examination records through electronic data processing has been carried out in co-operation with the Ministry of Science and Research and the Vienna Technical University. This has provided important information for planning purposes. At the moment, a similar flow survey is being carried out in the Styria Land.

Another student flow analysis in the field of higher education has been carried out in co-operation with the OECD. It would not have been possible to develop this experimental model if an intensive administrative reform had not taken place in Austria whereby student enrolment and examination records were computerised.

1.5 Main obstacles to a greater impact of research on the classroom

In the past it has been very difficult for decision-makers to have an overall view even of domestic educational research findings. This drawback has been overcome by a documentary survey of all educational research projects, and research findings can now be disseminated among education experts and administrators (see para. 2.4).

Of course, attempts have also been made to involve teachers in educational research and to acquaint them with the results of research carried out at home and abroad. This is achieved to a certain extent when teachers co-operate in research projects concerning school experiments. The involvement of institutions of teacher-training and further training will be dealt with in detail under para. 1.7.

1.6 Researchers and educational experiments

In this connection we should again mention the Centre for Experimental Education and School Development within the Federal Ministry of Education and Art. All planning co-ordination and scientific supervision of school experiments, which were extended in the school year 1971-72, originate at this centre. Because this planning and decision-making centre shares personnel with universities and research institutions (representatives of the education and psychology departments of the universities as well as representatives of the institutions of further teacher training and of the Federal Institute of Educational Psychology are attached to this centre), there is close co-operation among these institutions. Through the co-operation of institutions of further teacher training, the Centre for Experimental Education can encourage teachers to participate in school experiments which would not be carried out without the active involvement of innovative and creative teachers. In addition, leading administrators also belong to the centre.

The Centre for Experimental Education and School Development is divided into the following departments:

Department I	:	Planning, development of and assistance in educational experiments
Department II	:	Evaluation of educational experiments
Department III	:	Educational experiments in the field of top level secondary general schools
Department IV	:	Documentation and information
Department V	:	Co-ordination of project work
Department VI	:	Experimental education statistics and data.

1.7 Familiarisation of student and practising teachers with educational research

The institutions of training and further training of teachers are very active in the field of educational research in addition to their normal educational duties. The combination of research and training can be considered to be a very advantageous pre-condition for the growth of research awareness among student and practising teachers. It cannot be denied, however, that more attention should be focussed on this area. One criticism often levelled at this training in the past is that professional preparation is not allocated enough time. Quite recently considerable efforts have been undertaken to overcome this shortcoming by the provision of practice-oriented university courses for teachers in training.

1.8 Rationalisation and cost-saving through research

Cost-saving in administration is the result of rationalisation measures. Such measures are especially stressed in Austria in the planning of the tertiary education sector, where they are urgently needed. For this reason, the Federal Ministry of Science and Research established an administrative reform commission composed of scientists and university professors as well as administrators. We cannot here deal with all the problems which are being handled by this commission, but it should be mentioned that an experimental model has been tried out in co-operation with the OECD which should facilitate an organised control of examination achievements and the duration of studies through electronic data processing.

The difficulties arising from the reform of universities should not be underestimated. The centralisation of facilities, at present spread over several university institutes, is in itself not enough, since centralisation measures do not always result in simplification, acceleration and cost-saving.

For the school sector there also exists a committee which deals with economic and cost-saving questions. At the same time, a number of research projects are surveying economic problems in education. The survey of educational research in Austria mentioned above quoted three such projects. The principal costs affecting the school expenditure of the Bund are to be investigated by regression analysis, and estimates of future financial needs are to be undertaken in these projects. The findings of these research projects indicate a great gap between the goal projections of the educational planners and basic statistical facts. This is true not only for school education but also for higher education where cost analysis can at present be worked out only with great difficulty, as noted in the Hochschulbericht 1972.

1.9 The role of educational research at post-secondary level

The reform of the post-secondary sector is at present in its beginning stages. Here, the work of setting goals by fixing examination subjects and the structure of fields of study (by means of laws and regulations governing study and by means of timetables) is under way. At the same time evidence of the democratic character of Austria is given by the participation of all who are involved in university life in the decision-making process (University Organisation Act). In the second stage of higher education reform, it will be necessary to evaluate subject contents and teaching methods - that is to say curriculum development in higher education will receive priority. Hence the Federal Ministry of Science and Research, which is responsible for the university sector of post-secondary education, supports research work in higher education. Meanwhile the "Study Commissions" which were established at several universities have gained the legal right to work out recommendations as regards teaching methods.

Thus, the "Study Commission" established at the Technical University of Vienna suggested an investigation into the learning behaviour of students in selected areas of study and a survey of subject content and professional requirements in certain others. These suggestions were welcomed by the Federal Ministry of Science and Research which supplied the necessary funds for these studies. The survey of educational research in Austria which has already been mentioned also quotes other research projects on university teaching (programmed instruction, psychological aspects of learning and motivation as regards university and teacher education). The results will be useful in the second stage of university reform.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research and development

Stimulation of educational research and development

The creation in 1970 of the Federal Ministry of Science and Research resulted in a central authority of the Bund responsible for the co-ordination of research projects and for the planning of the allocation of funds in order to protect the interests in the field of research common to the various branches of the administration. At the same time, research and development are considered integral components within the jurisdiction of the various federal ministries. Therefore the individual ministries have authority over research and development within their own areas (Ressortforschungsbereiche).

In this context, the bodies responsible for research and development in Austria are:

the Federal Ministry of Science and Research, and

the Federal Ministry of Education and Art.

Both ministries have central departments (planning departments or sections) and central advisory bodies (Centre for Experimental Education and School Development, School Reform Commission and its sub-committees, University Planning Commission) which stimulate and promote research projects in the field of education. In addition to these ministries, institutions such as Länder school authorities, provincial governments, chambers of labour and of commerce, and private interests should be mentioned in this connection.

Planning and co-ordination

The ministries mentioned above plan and co-ordinate educational research and development in those areas for which they have responsibility. In order to co-ordinate the educational research work which is promoted by non-federal authorities, a documentary survey of educational research projects has been published by the Federal Ministry of Education and Art since 1972 (see 2.4).

Finance

As has been said above, educational research projects are financed in Austria by the Federal Ministries of Education and Art and of Science and Research as well as by the Länder (school authorities of the Länder or of the Municipality of Vienna), by chambers of labour or commerce and by private bodies.

2.2 Expenditure

At present it is not possible to calculate the total expenditure on educational research in Austria. The reason for this is that besides the federal authorities, the authorities of the Länder and corporate and private bodies also finance educational research. The survey on educational research in Austria (see 2.4) says that "little exact and reliable data ... in the field of financing of research work could be reported ".

Perhaps those figures that are available could, however, give some idea of the expenditure on educational research in Austria. The Federal Ministry of Education and Art allocated in the years 1971 and 1972 the following amounts for research (the percentages in parentheses indicate the proportion of the total expenditure of the Bund on research and promotion of research):

Year	Million A S	%
1971	14,286	(1.07)
1972	15,564	(0.88)
1973	17,993	(0.88)

These figures give only an incomplete picture because considerable amounts are spent by the Federal Ministry of Science and Research on educational research (of all the central bodies of the Bund this ministry actually allocates the greatest amount for research and promotion of research, for example in 1972 - 75.87%, in 1973 1584.711 million AS = 77.09%) but, as already mentioned, the available figures do not indicate the amount devoted by this ministry specifically to educational research.

2.3 Priorities

In 1978, the Federal Ministry of Education and Art published a survey of educational research in Austria (see para. 2.4) which clearly indicates some focal points of educational research. These are:

- research into comprehensive forms of education for pupils aged 10-14;
- research into vocational training and adult education;
- pre-school education;
- teacher training;
- university didactics;
- curriculum development (especially for natural science education and geography);
- media research and political education.

In cases where the research projects were requested by central authorities of the Bund, the decision concerning the area to be studied resulted from the educational policy of the federal government as defined in the governmental declarations of 5 November 1971 and 27 April 1970.

To clarify this, it is necessary to refer to paras. 1.1 and 1.9 where it was pointed out that adult education and pre-school education have priority in educational policy. The same is true of research projects which deal with performance evaluation and measurement, because the findings of these projects are very important in the context of the current school experiments, aiming to test a comprehensive school model (with differentiation according to performance, together with advanced instructions and remedial teaching) where it is necessary to find objective criteria for the grouping of pupils and for performance comparison. The great importance of vocational education and the shift of emphasis towards the problems of subject content and teaching methods in higher education were also indicated in the preceding paragraphs.

Austria is giving considerable financial support to two projects being carried out in close co-operation with OECD:

- experimental model for analysis examination achievement and duration of studies (see paras 1.2 and 1.8);
- the second OECD Review of National Educational Policies in Austria (alternative decision models for reforms in school and university education.

The same is true for the EUDISED project, initiated by the Council of Europe. The Federal Ministry of Science and Research has established a special project group in order to co-ordinate Austrian participation. This project group has co-operated very actively in the elaboration of a German educational thesaurus.

Perhaps two other projects should be noted in this connection:

- pupil flow survey, Vorarlberg;
- pupil flow survey, Styria.

Both projects have the full support of the provincial governments involved as well as that of the Federal Ministry of Education and Art. It is planned to work out a provincial school development plan for Vorarlberg on the basis of the flow survey. This project will be carried out in conjunction with the International Institute for Educational Planning (IIEP) of UNESCO.

2.4 Dissemination of information

The Federal Ministry of Education and Art in agreement with the Federal Ministry of Science and Research published for the first time a survey of educational research in Austria at the end of 1972, following a recommendation from the Economics of Education Committee of the School Reform Commission. The recording of developments and the completion of this documentation (at present it includes 102 research projects) are being planned. The purpose of this documentation is not only to aid decision-making in educational planning, but also to offer researchers an overview of the present state of educational research in Austria. Moreover, this survey could stimulate further studies in this area.

Besides the documentation mentioned above, persons concerned are kept informed about the research and development work carried out in connection with the existing school experiments.

Feedback is ensured as project planners (that is to say, leading administrators of the Federal Ministries of Education and Art and of Science and Research) are in continuous contact with researchers and research institutions. Current problems, as well as individual study results, are often discussed by researchers and administrators and occasionally by teachers.

A broader public is kept informed by television and other mass media of developmental work in existing school experiments. Researchers involved in the planning of the school experiments are co-authors of the television programmes.

2.5 Impact of research on educational development and innovation

Strategies for implementing educational research findings and promoting research-based development and innovation

As has been shown by the school experiments, Austria is following a development model with the following characteristics. First, research provides realistic development models which are put into practice step by step and are at the same time scientifically controlled and evaluated. After the appearance of concrete results permanent innovative models are introduced.

Experience gained so far with such strategies

The research and development model in the field of school education was first introduced in the school year 1971-72.

The experience gained from the experiments is now being evaluated. First results of this evaluation work are under consideration for final political decisions.

3. FUTURE DEVELOPMENTS

3.1 Trends and new measures

The research and development model described in 2.5 will remain unchanged in the near future. At the same time, the transfer of educational research projects and their results into data processing form is being discussed with particular reference to the EUDISED project, a project having full Austrian support.

8

BELGIUM

Report of the Ministry of French-language Education and Culture

1. THE ROLE OF RESEARCH

1.1 Features of the Belgian education system which affect educational research

The important reform movement begun in 1970 spread and gained momentum during the years covered by the survey, defining and extending its objectives in the in the process. It is concerned with pre-school, primary and secondary education; the reform of higher education having only just begun.

The reform of pre-school education became operational in 1974 in the official sector and in many primary schools its objectives had been adopted for all classes by 1976. In 1978, the reform was introduced in state secondary schools from the first year, and the timetables for the following years were brought into line with a view to progressive reform.

This far-reaching transformation could not have been brought about without a great deal of preparatory work, together with experiments in consolidation and appraisal of the reforms as they progressed.

The researchers, on the staff of university institutes specialising in educational psychology, whose assistance had been of the greatest value to the committees preparing the reforms, were asked to undertake further investigations between 1973 and 1978. It is important to define the aims of education more exactly, to base educational reforms on the findings of rigorous experiments and to evaluate the effects of the changes, so that, if need be, corrective action can be taken along the way.

There is general agreement on the dual function of universities, where education and research must go hand in hand, the former being fed by the latter, lest it should become rigid or dogmatic.

1.2 Co-operation between researchers and decision-makers

The link between researchers and the people in charge of educational systems has become closer, although it cannot be said that there is systematic co-operation.

In May 1978, the Minister of Education took note that the educational establishments wanted research to serve as a basis for teaching in the classroom, and with this in mind asked the universities to encourage efforts to make their research more widely known.

The researchers are continuing their collaboration with the teaching methods committees and various working parties.

The Ministry of Education, in particular the Organisation of Studies Department, continues to finance operational research, and is in fact doing so to an increasing extent. But it has to be realised that the place where regular contact between the policy decision-makers and the researchers can be established has not yet been found - the place where the school can meet the university, where research subjects can be decided by common agreement according to the urgent needs of each.

1.3 Researchers' collaboration at local level with teachers, administrators and parents

Contact between researchers and educational circles has been fostered to a considerable extent by the retraining and further training of teachers which has developed greatly during the last four years.

A number of university research centres specialising in the assessment, the basic education and the intellectual development of the child have co-operated in the most direct and active manner in the retraining and further training of nursery school, primary school and secondary school teachers. Inspectors as well as education faculty and teacher training college staff have taken an active part in this work of continued training.

We mention in particular the Liège University's action research at pre-school level, carried out simultaneously in nursery schools and training colleges for nursery school teachers in several French-speaking Belgian towns; the seminars under the direction of the Experimental Teaching Methods Laboratory of the same university, at which the instructors practise making their own evaluation instruments and initiate their colleagues into this new technique; the participation by mathematics teachers of the reformed secondary education system in the experiment of the Experimental Teaching Department of Brussels University to devise for use at the "pupil guidance" stage specific tests, and also that of the mother-tongue teachers at the Arlon and Virton training colleges, who are contributing to the designing of tests aimed at improving the ability of pupils in their first years of the reformed secondary education system to consult documents.

In addition, between 1975 and 1977 an interesting survey was carried out by staff (guidance officers and psychologists) of the state psycho-medico-social centres responsible for pupil guidance. Its aim was:

- to determine how far education has attained its first objectives where the reactions and behaviour of the young are concerned;
- to show how the reformed education system is regarded by young people and their parents;
- to ascertain the choice made at the end of secondary education and how far it has been successful.

An effort has been made in some of the research projects to involve the parents (attitudes, views of young people, participation), but nothing systematic has been done in this field.

1.4 Contribution of research to reform in the classroom

The main purpose of educational reform at different levels is to decide on the aims of education, to suggest adequate methods of attaining them and to provide the means, at secondary level, of observing and guiding the pupil.

The research in hand during the period covered by this report is helping to define and specify the educational aims of pre-school, primary and secondary education, and to achieve them.

As more and more innovations take place and modern educational technology, in all subjects, becomes increasingly complex, research is seeking to improve the ways of applying these techniques in the classroom, to evaluate their effects and to take corrective action if necessary.

Examples of this are the enquiries into workshop classrooms in nursery schools; the "5 to 8 cycle" experiment in primary schools; the adaptability of young children; independent work by secondary school pupils; insistence on reference to that which is concrete and actual; audio-oral modern language learning; achievement in respect of science and mathematics teaching.

1.5 Main obstacles to a greater impact of research on the classroom

Resistance by teachers to change has decreased since the last survey, and researchers are seeking more to translate their findings into operational conclusions with a view to their wider application. The creation of a national educational documentation and information centre is under consideration.

However, there are still some major obstacles:

- there is still no machinery in existence which would enable the educational administrators to work out a coherent research policy;
- it is becoming more and more expensive to finance research;
- teacher trainers do not initiate their students sufficiently into the practice of educational research.

1.6 Researchers and experiments in schools

Researchers are very anxious to make a personal contribution to the use in schools of the findings of their research. The contacts they thus have with teachers and school life are generally excellent and benefit all parties. It sometimes happens that, as a result of these contacts, the teachers themselves initiate fresh experiments and invite the researchers to take a share in assessing them (cf. 1.3).

1.7 Familiarisation of student teachers and practising teachers with educational research

Future teachers are undoubtedly still lamentably ignorant about the possibilities and achievements of educational research.

Contacts between practising teachers and researchers have progressed (cf. 1.3) but are still inadequate.

During 1978, the research centres working in co-operation with the Organisation of Studies Department of the Directorate General of the Ministry of Education were invited to present their work in the form of articles in an educational review published by that department and sent free of charge to all teachers in state schools.

1.8 The contribution of research to the rationalisation of education and to cost-saving

This subject of considerable concern will be added as soon as possible to the research projects in hand.

1.9 The role of educational research at post-secondary level

As stated in paragraph 1.1, the reform of the short university level teacher training course has only just begun. One research project is seeking to back up the continuing and formative assessment of the training of student teachers by a reliable teaching methods dossier based on recent learning and teaching data collected at international level. But that is an isolated effort.

The other types of non-university higher education have not been reformed up to now, except for industrial engineering and architecture courses. Any research into this type of training would be done by private bodies and would not be recorded officially.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

As before, the Organisation of Studies Department of the Ministry of Education continues to promote educational research on its own, in the absence of co-ordinating machinery for projects, structuring finance and planning research programmes.

The department is trying - but with excessively small resources - to pursue a coherent plan of work to support recent educational reform and so far as possible to prevent the dissipation of the meagre funds devoted to educational research.

It should be noted that the Ministers of Education of the two language areas of the country have, since May 1978, been studying the reorganisation and restructuring of foundations which promote scientific research, and first and foremost the Fonds de la Recherche Scientifique Fondamentale Collective (Foundation for Fundamental Collective Scientific Research), a body of ministerial origin.

2.2 Expenditure

In 1978, for example, in Belgium, the budget for scientific research was of the order of 17 thousand million francs.

The National Scientific Research Foundation administers three parallel funds which support:

i. medical research;

ii. nuclear research;

iii. original research.

The Foundation for Fundamental Collective Scientific Research, a ministerial body, has only about 20,000,000 Frs to spend on educational research programmes.

The Organisation of Studies Department subsidises this foundation to the amount of 1,000,000 Frs. From its own budget it supports a programme of ten research projects of a clearly operational character by means of short-term contracts with university centres specialising in educational psychology.

2.3 Priority sectors

The educational decision-making authorities cannot devote more attention and effort to one sector rather than another, since each is decisive for a pupil's future.

There is no doubt that the people in charge and the teachers are particularly concerned about pre-school and primary education because a person's whole life is decided during this period.

Research into the following subjects has therefore received special attention during the period covered:

- the definition and achievement of the aims of pre-school and primary education;
- the development of adaptability with the help of scientific tests and programmed learning at the pre-school and lower primary school levels;
- in the context of measures to unify pre-school and primary education, an assessment of the experiment under way in the "5 to 8 cycle";
- remedial treatment for backward children between the ages of 4 and 6; remedial treatment for difficulties in adapting to primary schooling, and for early educational failure.

This does not mean that the problems of reformed secondary education have ceased to concern the people in charge and researchers. At that level, generally speaking, research has been directed towards the scientific perfecting of techniques for solving the problems caused by:

- the new system of assessing mental processes;
- the introduction of new areas of knowledge into the curricula;
- innovations in the methods applied.

Operational research has also had the following more particularly in view:

- the definition and achievement of the aims of secondary education;
- techniques for the exploration of situations by pupils: team work;
- ways and means of achieving good interdisciplinary teaching;
- the audio-oral learning of modern languages, etc.

As stated in paragraph 1.1, the reform of higher education has only just been started, and no basic research has been undertaken at that level.

However, a considerable improvement in the continuing training of teachers has been brought about by retraining involving researchers, educational method advisers and teachers.

2.4 Dissemination of information

It should be noted that during the period covered an effort has been made to disseminate more widely and to popularise educational research by means of two series of publications produced by the Organisation of Studies Department of the Ministry of Education. They are:

- a scientific series intended for researchers: "Recherche en éducation" (11 titles published up to 31.12.78);
- an educational series making the practical findings of research available to teachers and educational administrators; "Pédagogie et recherche" (7 titles published).

In addition, in accordance with Council of Europe instructions, Belgium sends in communiqués on research in progress and completed to appear in the "EUDISED R & D Bulletin".

2.5 Impact of research on educational development and innovation

Little by little, a slight improvement, worthy of note, can be seen in mentality and views, but it is a long-term business. There is resistance to change in some cases, and spectacular results cannot be expected in the near future.

As in the case of the previous period covered by the survey, it is better for the innovations to be introduced first of all in schools entering into the spirit of the research and thus providing a favourable atmosphere.

3. FUTURE PROSPECTS

3.1 Trends and new measures

It has been noted that:

- researchers and practising teachers are tending to get together; some teachers openly express a wish to see applied research adhere more closely to educational needs; some research also takes place in the classroom, in direct contact with school life (cf. paragraph 1.3);
- a certain interest in research is being shown by the educational decision-makers, who were becoming convinced, in 1978, that educational reform cannot take place without close co-operation with educational research centres (cf. paragraph 1.2).

The Minister of Education has recommended that applied research be undertaken in certain fields, such as::

Pre-school and primary education

- organisation of the workshop classroom;
- liaison between pre-school and primary education;
- assessment of the 5 to 8 experiment;
- the initial contacts of migrant workers' children with the school system;
- compensatory teaching for the underprivileged: detection and remedial treatment, particularly in special schools (socialisation).

Secondary education

- modern language learning: research into its methodology;
- the best way of spreading activities over the whole course;

- the organisation of education according to a unit/credit system;
- individualised teaching and educational technology;
- educational techniques designed to foster expression in all its forms: imagination, initiative, independence, responsibility, etc;
- the difficulties met with by young people leaving school to start work: criticism of vocational training.

Higher education

- assessment of the achievements of higher education.

3.2 Intensified European co-operation

As part of the effort to harmonise education in Europe, the Council of Europe, OECD, and the European Community are asking the Ministry of Education to take part in research with the following aims, among others:

For the Council of Europe

- the organisation of education according to a unit/credit system;
- experiments with the EUDISED norms;
- the cultural integration of migrants: study of requirements in the matter of European and international establishments.

For the Education Committee of the European Community

- the creation of international education information services: preparatory survey;
- modern language learning; improvement of methodology;
- the choice of course or occupation at the end of compulsory schooling;
- the development of common curricula or research programmes in establishments in several member states.

Belgium is also taking part in collecting information and despatching communiqués on ongoing and completed educational research for publication in the Council of Europe "EUDISED R & D Bulletin", as stated in paragraph 2.4.

However, there is no important new measure giving effect to these trends, or changing the pattern of research policy.

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the national education system which affect the role that educational research plays in it

Although the Cypriot educational system is centralised, it allows and encourages research which will give to the authorities information on the results from the application of projects or changes in the syllabus, curricula, etc. Such information helps the policy-makers to assess the results of the projects decided upon and proceed to modifications where necessary.

The role of research as an agent in the formulation of policy and decision-taking starts with the evaluation of the results of projects decided upon by the authorities.

1.2 Co-operation between researchers and decision-makers

The co-operation between researchers and decision-makers can be viewed in the framework of (1.1) above and, for this purpose, an educational research unit has been functioning since 1963.

1.3 Researchers' co-operation with teachers, administrators and parents in the development of education at the local level

Such co-operation exists, and there have been cases where projects have been started as a result, but the initiative to call in a researcher has to be taken by those concerned. Such co-operation is being promoted through in-service training of teachers, talks to parents, large-scale research projects carried out centrally and needing the assistance of the teachers, and spontaneous small-scale research carried out by teachers alongside the teaching activity.

1.4 Contribution of research to reform in specific fields of education and to innovation in the classroom which may be adopted generally

Granted the role of research as described in the subheads above, the publication of research reports affect reforms in specific fields (eg the teaching of English and mathematics in the elementary school), especially those reports dealing with the analysis of achievement results in learning areas.

As regards innovation in the classroom, the role of research limits itself to giving insight into innovations introduced in the classroom.

1.5 Main obstacles that prevent a greater impact of research in the classroom

The main obstacle preventing research from having a greater impact on the classroom is the economic limitations, because in a centralised system like ours increased expenditure, resulting from qualitative improvements suggested by research, would be very high, since such reforms would have to be applied on a nation-wide scale.

1.6 Researchers and educational experiments

Educational experiments in the broader sense are decided at the policy level (eg electives in the upper secondary school) unless it is felt that information supplied by research is necessary for the formulation of the policy. As it was referred to earlier, the researchers may be called in for the evaluation of the experiment. We can cite, as an example, the introduction of modern maths in the primary school which was a policy decision and the evaluation of the project (ongoing research) followed as a result of that decision.

Any innovative activity by teachers is encouraged, and the researcher is always at the disposal of the schools involved to help. Special encouragement is given to teachers who are willing to carry out small-scale research on their everyday classroom work (action research).

1.7 Familiarisation of student teachers and practising teachers with educational research

Student teachers are familiarised with research through courses they attend during their preparation as teachers. They are also encouraged to do small-scale research in the schools at which they are practising.

The practising teachers are familiarised with research through in-service training and individually through their own initiative.

1.8 Contribution of research to rationalisation and cost saving in the provision of education

The contribution of research in this field is only indirect, and as far as the findings are concerned they are given due consideration.

1.9 The role of educational research in study reform and reorganisation at the post-secondary level

There are no mechanisms employing research in this field apart from the utilisation of research findings in other countries and locally.

2. GENERAL FRAMEWORK

2.1 Promotion planning and financing of educational research

a. R & D is stimulated and promoted through courses in in-service training, the Pedagogical Academy and the Institute of Education.

b. There exists at the Ministry of Education an educational research unit for planning and co-ordinating R & D.

c. Financial provision is made in the annual estimates under several subheads of "Education" and "Cultural and Other Services".

2.2 Expenditure

Figures are not regularly available on actual or estimated total national expenditure on educational research and development.

2.3 Priority fields

a. i. Evaluation of achievement of school work in the primary school;

ii. Elective subjects in the upper secondary school;

iii. Revision of curricula.

b. As regards (a)(i), it was felt that we should know the levels of achievement in school work. The Department of Primary Education took the decision.

As regards (a)(ii), it was decided at the highest level of policy-making to re-plan the existing system. A student in the fourth grade of the secondary school has to take the common core of subjects and choose from a list of subjects in addition.

As regards (a)(iii), the Departments of Education decided on the revision of curricula, introducing in this respect the idea of a continuous process.

c. No special measures.

d. i. An evaluation of achievement in modern maths in the secondary school is in progress.

ii. The elective system is carried out experimentally in a number of schools.

iii. Revision of curricula in science and other subjects is being carried out.

2.4 Dissemination of information

a. To researchers: through reports, articles, discussions.

b. To administrators and teachers: through conferences organised for the purpose, reports.

c. Not applicable.

d. Through journals, articles in daily papers, conferences, talks, etc.

2.5 Impact of research on educational development and innovation

a. There are no particular strategies for implementing findings. This does not mean that the influence of such findings does not play any role.

b. Not applicable.

3. FUTURE DEVELOPMENTS

3.1 Research is becoming respectable, and there are trends towards a growing need for the investigation of educational problems faced by the Departments of Education. This is also shown in the financing of projects undertaken which is not unduly limited.

3.2 Intensified European co-operation

Co-operation at European level in educational research and development should be based on common problems shared by member states. Some of our major issues which could fit into programmes of European interest are:

a. The consequences of the rapid expansion of secondary education and the repercussions on the educational system.

b. Vocational education and training, with special emphasis on the 15-18 age group.

c. Compensatory education for the less socially and economically privileged groups, starting with pre-primary education.

d. The effective uses of educational technology in the schools.

DENMARK

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the Danish educational system affecting the role that educational research plays in it

The "Folkeskole" (primary and lower secondary school) consists of municipal schools and comprises a voluntary pre-school year, nine years of elementary schooling, and one year in the 10th form. Thus the administration and organisation of the "Folkeskole" is decentralised, which means that each municipality is comparatively free to plan in accordance with local wishes and possibilities. This applies mainly to the set-up of the local school structure but also to regulations governing instruction proper, including the importance accorded to a particular subject.

The Ministry of Education puts forward proposals for curricula covering all subjects. These are, however, only intended to guide and support the local school authorities in their elaboration of the individual curricula and to help each teacher to plan his lessons.

The great degree of freedom granted to each municipal school and its teachers has to a certain extent promoted local initiative which affects school development and innovation and the execution of educational research. On the other hand, the decentralisation of the "Folkeskole" has somewhat obstructed attempts at joint and centralised innovative work as regards this sector of the educational system.

1.2 Co-operation between researchers and decision-makers

In 1973 the Central Council for Education (CCE) was set up, and in 1975 educational councils were established under it for the basic school, for post-compulsory education, for tertiary education, for youth and adult education, etc. to assist the CCE in their respective fields with proposals for comprehensive educational planning. The setting up of these councils concentrates important elements of the debate on individual courses or the educational system as a whole in central bodies. The membership of these councils comprises of decision-makers and researchers, and in this way the possibility is opened up for mutual influence, or at any rate for mutual exchange of information within all educational sectors.

These councils and committees have indirectly promoted research by channelling research and development work through them, which also implied a certain use and testing of research results. Their principal aim has been to serve partly as advisory bodies and as bodies that prepared reports for the Ministry of Education, and partly as stimulating agents for development work in education. However, it has not been their primary task to deal with research in education.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents

The government of the "Folkeskole" is largely decentralised (as mentioned in 1.1). This will appear from the fact that municipal councils decide on all matters relating to schools in their areas in accordance with regulations laid down in the Primary and Lower Secondary School Act and the School Administration Act.

Through the work carried out partly by the municipality's own supervisory bodies, (educational committees and school boards, which more often than not include members of the municipal council) and partly by the teachers and the administrative staff, it is ensured that all groups connected with the school and interested in its welfare are involved in co-operation on details concerning all school affairs. This means that experiments and innovative ideas can only be accomplished through collaboration, no matter who took the initiative in the first place.

Educational research and innovative work in the "Folkeskole" is frequently carried out by the teachers themselves supported by local school psychologists and educational consultants, some of whom belong to educational research departments of the municipality, where these exist. In addition, it is possible for the schools to be assisted in their research by the Danish Institute for Educational Research, the Royal Danish School of Educational Studies, and the Council for Experimental Primary and Lower Secondary Education.

The Danish Institute for Educational Research and the Royal Danish School of Educational Studies are national research bodies, and the School of Educational Studies also serves as a further training centre for teachers at a "Folkeskole" and private schools. During actual research and innovative work both institutions co-operate closely with teachers from all schools in the country. This should ensure that links are established between theoretically based educational work and the teaching at the various schools.

In the early 1950s the Ministry of Education set up councils for experimental education for the "Folkeskole" and for the upper secondary school. Their task was to follow school experiments in progress and to take initiatives to start new experiments that were needed. The first survey of experiments in the "Folkeskole" was published by the Danish Institute for Educational Studies, which started its activities in 1966 with the purpose of preparing new teaching structures and types for the top forms in the "Folkeskole".

In 1969 the previous Council for Experimental Primary and Lower Secondary Education was superseded by another of the same name. This council had the required means to support the experimental activities to a higher extent as well as to co-ordinate them, and this can also be seen from the surveys published in 1974 and 1976.

The Council for Experimental Education assists the Directorate for Primary and Lower Secondary Education, Youth and Adult Education, Teacher Training, etc (Ministry of Education) in its task of supervising, inspecting, and promoting ideas with regard to research work in schools. The schools for their part have the opportunity of being guided by supervisors specialising in research and of receiving state grants (to a limited extent, however, because of a tight budget).

The Council for Experimental Upper Secondary Education was abolished, but Section 21 of the Upper Secondary School Act permits experiments to be carried out following the granting of permission from the Directorate. A 1974 Ministerial Order also opened up possibilities for experiments with new forms of administration (Avedøre Statskole).

Upper secondary education was expanded via the introduction of higher preparatory education courses in 1967.

Youth education got increased opportunities for experimentation through the experimental basic vocational education programme which ran from 1969 to 1972. The Council for Experimental Basic Vocational Education was in charge of, and followed innovations in this area until 1977, when a Bill for a more definite scheme was enacted.

1.4 Contribution of research to reform in the classroom

All research that has to do with the education of the 5 to 18 year olds has influenced classroom teaching to a greater or lesser degree. The most decisive research issues over the last few years we can mention:

- pupil differentiation;
- differentiation of teaching;
- evaluation of instruction;
- school environment;
- educational and vocatational guidance;
- in-schooling;
- special education.

Part of the research and development work in progress aiming at classroom reforms can hardly be termed educational research. As was mentioned above it must be termed development or innovative work - but it is in no way considered less important.

1.5 Main obstacles to a greater impact of research on the classroom situation

The main reason for the difficulties connected with putting actual research results into practice in the classroom is that in order to be deemed research the work must be concentrated on a small number of specific aspects of a theoretical or didactic nature.

If the research result was to be put into practice, it would have consequences for several other fields, and perhaps it would change the order or priority of the objectives of the school; or it would presuppose that a number of given prerequisites for the work in the classroom could be varied. A change in the order of priority of the aims of teaching, or a change in the framework for teaching are political decisions - and consequently a researcher will have to refer his results to political bodies - and not to the class-teacher.

However, the class-teacher can implement reforms within the given framework - inspired by research results he comes across in his own reading or during in-service training courses, or supported by local or central research authorities.

1.6 Researchers and educational experiments

In practice, co-operation between practising teachers and researchers working with innovation and educational experiments takes various forms. The pattern shows a steady change from experiments primarily led by researchers to innovative work primarily led by teachers.

As stated in 1.3 above, in order to establish educational research and innovative work at a school, consent must be given by a school board and a teachers' council. This consent must be approved by the local municipal council and, in certain cases, by the county and the Directorate for Primary and Lower Secondary Education, Youth and Adult Education, Teacher Training, etc under the Ministry of Education.

The Danish Institute for Educational Research and the Royal Danish School of Educational Studies carry out a great deal of educational research and innovative work at schools in various regions of the country. In these projects the teachers act as the researchers' assistants or collaborators. Researchers attached to the above-mentioned institutions and supervisors of the Council for Experimental Primary and Lower Secondary Education can be consulted by teachers working with experiments and innovative work in their own field of specialisation and in their own school.

Schools and organisations can obtain additional assistance for carrying out projects from educational research experts attached to local institutions of educational psychology and departments of experimental education.

There are plans for the setting up of local departments of experimental education in a number of municipalities (at present they exist only in the City of Copenhagen and the municipality of Gladsaxe). These departments are expected to put forward independent views relevant to educational research and to offer their support to teachers.

1.7 Making students and practising teachers familiar with educational research

Information concerning educational research could have been disseminated on a considerably larger scale than is the case today. However, during recent years several steps have been taken towards improving the flow of information.

Since 1968 the Ministry of Education has published a journal "Uddannelse" (Education) which carries frequent reports on research-based work.

The Council for Experimental Primary and Lower Secondary Education has published some articles and is planning the publication of reports on, for instance, new findings as regards educational psychology, open plan schools, and counselling.

The Royal Danish School of Educational Studies arranges long and short courses for practising teachers. These courses deal primarily with the feedback of educational research. In addition, the school offers courses of three to four years' duration, of which educational research forms a major part.

The Danish Institute for Educational Research conducts comprehensive research work and frequently publishes the findings of such work.

The National Research Centre of Education informs teachers of research findings via the press and its own publications.

The Danish National Institute of Social Research has been dealing with educational problems to a considerable extent in its publications.

As far as student teachers are concerned, conditions vary considerably at the training colleges in this country (the above-mentioned information is to a certain extent disseminated among the students). However, it is beyond doubt that educational research material is applied in college teaching to an ever-increasing extent.

1.8 The role of educational research in higher education at post-secondary level

The courses of higher education had long been neglected as concerns educational development. But this neglect was made good in 1971 when the Planning Council for Higher Education was set up.

In the course of the 1960s the many endeavours to change the courses in all fields proved to be effective, as changes were made to a greater or lesser extent in the individual fields. But no serious efforts had been made to study the coherence in the educational system, as the only result of work undertaken was a description of the many barriers that imperceptibly and unintentionally had arisen between the various educational fields, and which prevented the development of the flexible educational system. Consequently, in 1973 the Minister of Education set up the Central Council for Education (CCE) - as was mentioned under 1.2 - and furthermore an educational Council for Further Education.

Research is discussed in a special section in the U-90 report prepared by the CCE. In this section it is said that the importance of research for U-90 will mainly be to "... show in what way the results of research done so far can contribute to a solution of the problems contained in U-90".

The research councils have a direct obligation to promote research, both by supporting research in progress, and by taking initiatives to start new research projects. As concerns educational research, it is only natural that the bodies interested in this are the State Research Council for the Arts and the State Research Council for Social Sciences.

When the state of educational research was examined in 1974 and 1975, it turned out that there was considerable uncertainty as to what was to be understood by educational research and as to its relation to pedagogical research. It was therefore considered to be desirable to delimit this term.

Furthermore, it was agreed that there was a great need for better co-ordination of research in progress and planned research in this field. It turned out that educational research was above all carried out at the University of Copenhagen, the University of Aarhus, the Roskilde University Centre, the Danish Institute for Educational Research, the Royal Danish School of Educational Studies, and the Danish National Institute of Social Research. It also turned out that there was no actual co-ordination between these research institutions or between the institutions and the educational policy bodies, such as the Central Council of Education, the Planning Council for Research, and the Council for Experimental Primary and Lower Secondary Education and the Council for Experimental Basic Vocational Education.

In order to facilitate a higher degree of co-ordination, it was thought it would be necessary to prepare a survey of educational research in progress. Consequently, a survey was carried out and the results of this survey may be found in a report published in July 1977 by the research Secretariat.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

Educational research falls within the fields of research covered by the Research Council for the Humanities, established in 1968 to advise the Ministry of Education in this field and to initiate, co-ordinate and support such research.

The Danish Advisory Science Council, set up in 1965, is responsible for the co-ordination of all scientific research activities including, as the case may be, educational research projects.

Educational research is permanently taking place at the following institutions:

The Royal Danish School of Educational Studies
The Danish Institute for Educational Research
The University of Copenhagen
Roskilde University Centre
The University of Aarhus
Aalborg University Centre
The University of Odense
The Danish Institute of Social Research
The Danish Technological Institute.

Occasionally other institutions carry out research.

Over a number of years the research councils have made efforts to cover neglected areas and taken initiatives by setting up secretariats, holding seminars, and inviting applications for projects within defined fields. In this way valuable research and co-ordination efforts have been carried out. But there seems to be a built-in weakness in this procedure. An initiative only covers a span of a limited number of years.

The other method is not so well-tested. According to this, the research councils might turn their attention to research efforts in progress at the individual institutions and then strengthen these further, instead of using neglected areas as its basis. Such strengthening could take place by the research councils offering co-ordination opportunities, training researchers that were needed, holding seminars, inviting foreign researchers, etc - or, in other words trying to intensify research in a specific field.

Thus, when a specific field had for some time had the opportunity of being thoroughly studied through such an intensified effort, the field would be more firmly "established", and then it would be possible for the researchers at the institution itself to follow up the efforts; these researchers would be qualified for and interested in concentrating their efforts on another area, eg a neglected area, by virtue of their co-operative efforts.

Undoubtedly, there are opportunities for using both methods in guiding educational research.

Finally, it should be stressed that educational research is bound up with many other fields, and therefore the interdisciplinary nature of this research should be stressed. Ideally, educational research should be carried out by co-operation between various sciences, such as educational studies, psychology, sociology, economy and philology, etc. Such interdisciplinary co-operation is evident in the setting up of institutes that deal with educational research at the university centres, where an interdisciplinary approach is a fundamental requirement.

If this interdisciplinarity is to have importance, there must be a careful co-ordination in this field. In the first place it is necessary to co-ordinate the different disciplines of educational research; such co-ordination will probably not arise by itself, but it may be promoted by the research councils encouraging and supporting projects of an interdisciplinary nature.

2.2 Expenditure

It is not possible to give an overall budget figure for expenditure on educational research, as the financing of such research is partly listed as means earmarked for individual projects, and partly appears as salary costs connected with positions involving a duty to carry out research, or as publication expenses at institutions that publish various materials.

2.3 Priorities

As was mentioned under 1.4, educational research may be put in order of priority by institutions and individuals taking up tasks that are considered to be central and topical problems by many people or - as described under 2.1 - by the research councils concentrating on neglected areas.

In the past research has been characterised by free choice, but the wish for a better co-ordination will probably lead to a higher degree of steering.

2.4 Dissemination of information

The Danish Institute for Educational Research and the State Library of Pedagogics both publish annual reports and lists of literature including articles on research activities and provide general information on educational research matters of interest to teachers.

The latter institution is also responsible for keeping the regional school centres informed about educational research and educational innovations and developments.

The Ministry is represented in the Planning Council for Higher Education by the senior administrators, and is thus kept informed about research in this field. The Ministry is also represented in the Council for Experimental Primary and Lower Secondary Education.

The Danish Institute for Educational Research, being under the authority of the Ministry of Education, informs it through reports and surveys on current educational research projects and their results. This is also the case with the Danish National Institute of Social Research.

In most other fields of educational research the information received by the Ministry may be regarded as informal.

One of the tasks of the school centres is to disseminate the results of research to teachers.

Educational research is relatively well-covered by the press, and the public is to a certain extent informed about research results

2.5 Impact of research on educational development and innovation

There is a comprehensive range of courses for teachers in the primary and lower secondary schools. The Royal Danish School of Educational Studies in Copenhagen, and the eight departments of this school in the provinces, offer full-time courses lasting one or more years, in-service training, and courses in connection with radio and TV. Furthermore, the individual municipalities and associations of teachers organise professional short courses in individual subjects. Some of the above-mentioned courses are aimed at increasing knowledge of new research results and are to some extent run by teachers who themselves are researchers.

3. FUTURE DEVELOPMENTS

3.1 Trends and new measures

See under 2.1.

3.2 Intensified European co-operation

It is the policy of the Danish government to support educational research in the Council of Europe, the OECD, the EEC, and the Nordic Council, and - as far as this is possible - to contribute to the research projects implemented.

The Danish representatives participating in the decision-making process as regards such programmes have in advance discussed proposals for research topics with domestic experts, and also consulted experts about the position to be adopted as regards the proposals made by the organisation.

FINLAND

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the Finnish education system which affect the role that educational research plays in it

The development of the Finnish education system is at present in an important phase. Implementation of the comprehensive school reform has been completed. The last regions in Finland were transferred to the new school system during the school year 1977-78. The post-comprehensive education reform, ie the reform of the upper secondary and technical and vocational education, was put on a legislative basis in 1978. Planning of the implementation of this reform as regards secondary education has been initiated and will be completed by the middle of 1980. The post-comprehensive education reform will be fully implemented by 1988-89.

Instruction in the nine-year comprehensive school is common to all pupils during the first six years forming the lower stage of the comprehensive school. At the upper stage of the comprehensive school, ie during the last three school years, instruction is differentiated so that the pupil may choose between syllabuses of different scope in foreign languages and mathematics, and the curriculum at this stage contains a number of optional subjects, too.

The reform of that part of the secondary education system which is between the comprehensive school and higher education institutions has far-reaching consequences. The most significant changes will affect vocational and technical education. In the first instance, the quality of vocational and technical education will be expanded. The present vocational and technical education system consisting of about 650 study lines will be co-ordinated by task field and 24 extensive basic study lines will be established instead; these 24 basic lines of study will be further divided into about 220 specialisation programmes. The quantity of vocational and technical education will be developed so that all comprehensive or upper secondary school leavers who have completed the basic general education programme will have access to vocationally or technically differentiated education either in vocational or technical institutes or institutions of higher education. The intention is to innovate also the streaming system in vocational and technical education so that access from one educational level to another will become more practical and extend up to the higher education level.

Although the reform primarily concerns the upper secondary and vocational and technical education it will also have its effect on the comprehensive school and the institutions of higher education. The average level of comprehensive school learning achievement will be raised and the dispersion of the pupils' school achievements decreased. Therefore, research will be conducted into how the above-mentioned system of streaming the major basic school subjects, based on syllabuses of different scope, could be replaced by arrangements leading to more homogeneous but at the same time higher learning achievements. One solution might be to substitute the present homogenous pupil groups - according to their learning achievements - by more heterogeneous groups of pupils.

The effects of the secondary education reform on higher education are in the first instance due to the fact that the intention is to expand the access from vocational and technical education institutions to the institutions of higher education.

In addition to the above-mentioned innovations, the government is expected to adopt a resolution concerning the arrangements related to the schooling of 6-year-old children in the near future. In 1978, a committee submitted its report on this issue; the report contains a proposal concerning the introduction to school education for 6-year-old children by adding a pre-school grade to the comprehensive school and by lowering the compulsory education age from 7 to 6 years. The present schooling system in Finland does not provide children under the age of seven with compulsory education. However, pre-school education has been arranged for 6-year-old children in the framework of the child day-care system; and numerous pre-school experiments have also been made.

Extensive innovations are under way also in the sphere of higher education. The purpose is to increase the integration of scientific and professional contents of higher education, to expand the curricula and to increase the effectiveness and planning of higher studies. The new system of higher education degrees will be implemented in 1977-78 by field of higher education. In the new degree system, the studies that can be pursued at institutions of higher education will be divided into 15 different fields of education. The basic degree is attainable in each of the educational fields through 1-10 degree programmes which have different professional differentiation alternatives. Development of scientific post-graduate education is being initiated too.

In the last few years, the status of the institutions of higher education as organisers of supplementary education has also been emphasised. The Ministry of Education recently launched a project to investigate the forms, priority areas and extent of supplementary education provided by the institutions of higher education as well as to evaluate the status of supplementary education and education of the open university type in the development of the adult education system in our country.

1.2 Co-operation between researchers and decision-makers

A remarkable number of the development projects affecting the Finnish education system are prepared and planned by committees appointed by the state. The committees, commissions and working groups planning significant innovations comprise educational researchers in addition to the administrators concerned.

In the practical implementation of individual research projects financed by the educational authorities, the authorities and research workers co-operate in the formulation of the commissions for research projects. In numerous cases, the authorities have wanted to appoint specific groups to supervise the research projects; in these groups are to be found representatives of both the authorities concerned and the researchers. By means of detailed commissions and supervisory groups the intention has been to guarantee that the research projects would yield such results as are quickly applicable with a view to practical decision-making. In addition, mention should be made of the fact that the administration of the Institute for Educational Research working in collaboration with the University of Jyväskylä, which is of central importance in the practical implementation of research work in the field of education, has been constituted so that the educational authorities are represented there.

Co-operation between authorities and research workers is less significant in the research work carried out at universities and institutions of higher education in the form of conventional "free" research. Efforts have been made to influence the orientation of this research by various forms of co-operation. For instance, during the first half of the 1970s, and advisory board for educational research, appointed by the government, was active. Its assignments included drawing up an educational research programme and co-ordinating research activities and co-operation between authorities and researchers. A corresponding educational research programme was later on drafted by the Academy of Finland, too. The educational section of the Central Board of the Research Council completed a development programme for educational research in 1977.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents

See 1.6 below.

1.4 Contribution of research to reform in the classroom

Research related to general education has in the last few years been concentrated on the following priority areas:

- pre-school education;
- combined grade instruction;
- evaluation;
- goal-oriented learning;
- differentiation of teaching;
- upper secondary school instruction in course form;
- education at school (the educational function of the school);
- teaching materials; and
- specific problems encountered in Swedish language instruction.

Nearly all the mentioned priority areas relate to the teaching and learning situation. Efforts have been made to apply the research results to the innovation of the curricula, teaching methods and teaching material.

Three large-scale R & D projects were recently carried out in the field of vocational and technical education. These concerned basic schooling in engineering, metal work and electronics. As a result of the R & D activities, new curricula were drafted and new teaching material prepared for these fields.

1.5 Main obstacles to a greater impact of research on the classroom

The main obstacle to educational research has been the problems of utilising research results. The difficulties have been mainly due to the fact that research has been carried out in isolation from the other decision-makers' current need for information and from other development work. Remarkable progress has, however, been made in this respect. The links between research and the needs of decision-making and general development work have been increased. This has been implemented by the following measures. First, efforts have been made to connect research with decision-making by means of the administrative and other measures described above in item 1.2. Secondly, efforts have been made to connect research and individual research projects with large-scale development projects which include experimentation and other development activities. Thirdly, the system of information dissemination about research results has been developed so that the results are reported on quickly to all interested parties in a usable form. Despite the steps taken, this issue is still controversial, and it will obviously not be possible to solve it as a whole, eg often the timetable for decision-making is too short in comparison with research work that always requires plenty of time.

1.6 Researchers and educational experiments

The contacts between research and experimentation, researchers, authorities concerned and the educational institutions implementing the experiments have been remarkably improved in cases where both research and experimentation have been linked with more extensive, coherent development projects. However, part of the experimentation activity is still not integrated with scientific research; nor is it always appropriate to connect research with individual experiments.

The contacts between experimentation and research on general education have been closer than in experimentation and research on vocational and technical education. The latter have been carried out to a smaller extent. The educational research capacity of the institutions of higher education has been almost entirely directed towards research on general education. The systems of both research and experimentation have been most developed in the general education sector. The National Board of General Education has a specific research and development bureau which supervises the research and experimentation projects. It works in close collaboration with the Institute for Educational Research at the University of Jyväskylä where the majority of research is being carried out. Thus the authorities and research units supervising and controlling experimentation activities work in fairly close co-operation.

The organisational preconditions of research and experimentation on vocational and technical education have been remarkably improved by the establishment of a large planning and development department at the National Board of Vocational Education at the beginning of 1979. This department is able to supervise and launch research and experimentation projects by means of improved resources and increased concentration and to establish the necessary contacts with research carried out at the institutions of higher education.

1.8 Rationalisation and cost saving through research

There are no investigations available concerning the extent to which research has contributed to rationalisation and cost saving in the provision of education.

1.9 The role of educational research at post-secondary level

Planning of higher education and the research related to this issue have increased remarkably in the 1970s. Research has been increasingly orientated towards current innovations, and the application of research results as a support for planning and preparatory work has increased. The priority in research has since the end of the 1960s and the first years of the 1970s shifted from research projects concerning the factors related to study and from surveys on current problems to R & D projects serving the purposes of the reforms taking place in the sphere of higher education. This has been partially a result of the marked growth of R & D financed by the Ministry of Education. Research projects related to higher education have been concerned by a wide range of planning groups. Committees, commissions and working groups appointed by the Ministry of Education have made investigations concerning, amongst other things, the reform of the internal administration of institutions of higher education, scope of the higher education system and its regional development of university degrees in various disciplines, development of the supplementary and further education system and integration of secondary and higher education. A particular mention can be made of the curriculum reform in higher education which was initiated at the beginning of the 1970s. The planning of this reform was carried out at three levels: the Ministry of Education, the supervisory groups for each educational field, and the planning organs of each faculty and department at the institutions of higher education. During the planning phase, a remarkable number of research projects and investigations were devoted to the development of higher education.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

The development of educational research organisation in Finland has two origins. On the one hand, basic research has been organised according to the general procedures on which all scientific research is based. On the other hand, the plans and decisions concerning the reform of the school system have had to be based upon information gathered with the help of research, and thus it has been necessary to construct a system of educational research to help educational decision-makers. Development in both fields has been intensive in the last decade and especially in the last few years. At the same time it has been necessary to consider questions concerning the collaboration of decision-makers and researchers, and an effort has been made to develop an organisation where effective co-operation is possible.

In the 1970s the Department for Higher Education and Research at the Ministry of Education has had at its disposal separate appropriations for the purposes of research on higher education. Research projects, investigations and experiments serving the needs of the planning and preparatory work related to innovations on the one hand, and research related to the follow-up of the implementation of the reforms on the other have been financed by means of these appropriations. The Department for Higher Education and Research has made efforts to define the major areas of research each year and to inform the institutions of higher education. The research and experimentation projects have been planned in co-operation between the Ministry and the institutions of higher educationon the basis of the proposals submitted by the latter. The majority of research work has been carried out at the above-mentioned Jyväskylä University Institute for Educational Research, but recently the part played by the other institutions of higher education has also increased. Research has been concentrated on the development of higher education teaching methods, improvement of the functioning of the internal administration of the institutions of higher education, scope of higher education and its regional development, preconditions for study, personnel training, and building of new institutions of higher education. The curriculum reform in higher education, initiated in the first years of the 1970s, has had a clear influence on the orientation of R & D concerning higher education. After the initiation of the reform, the Ministry of Education is organising a large-scale follow-up study on it.

The general system for basic research

Basic research is carried out by both the private and the public sector in Finland. In the 1970s, the part of these two sectors in respect of research funding and of the number of man years devoted to research has been about equal. In practice the two sectors cover the expenses incurred by research activities from their own funds, although in the last few years the state has increased its financial support for research carried out by private enterprises.

In the public sector, the most important research institutes are the institutions of higher education, not forgetting the role of the state and the various ministries and national boards. The administration of science in Finland is often characterised as being semi-centralised because the Ministry of

Education is the central Ministry in matters pertaining to scientific research and the other ministries co-ordinate and finance the research carried out in their respective sectors. In practice there are advisory boards or other organs directing research activities in nearly all fields of administration.

The highest advisory body in science administration is the state Science Policy Council. The members of the Science Policy Council are the Prime Minister (chairman), the Minister at the Ministry of Education responsible for Higher Education and Scientific Affairs (vice-chairman), the Minister of Finance, the Minister of Agriculture and Forestry, the Minister at the Ministry of Trade and Industry responsible for industrial development, two other Ministers appointed by the government, the chairmen of the Central Board of Research Councils and the Council for Higher Education and five other members familiar with scientific research and development who can be appointed for the maximum of two three-year terms. The chairman of the working committee of the Science Policy Council is the Minister of Education.

The current Decree on the Science Policy Council dates from 1972. Under this Decree, the task of the Council, as an advisory body to the government and its ministries, is to deal with:

1. the general development, orientation and co-ordination of scientific research and education arising within the various ministries;

2. important matters concerning Finland's participation in international scientific co-operation;

3. the distribution of research funds to the various ministries, and the channelling of these funds to the various areas of research and development;

4. legislation concerning scientific research, education and information dissemination; and

5. proposals for the establishment of, fundamental changes in or closing down of research institutes, universities and other institutions of higher education.

The Academy of Finland, responsible to the Ministry of Education, is a central government agency dealing with matters pertaining to scientific research.

The scientific and science policy activities of the Academy of Finland are carried out by the Central Board of Research Councils and the national research councils. The members of the Central Board are the chairmen of the research councils, with three other members appointed by the government and with a chairman appointed by the President of the Republic. The national research councils have a chairman and the number of members varies between 9 and 14. These are appointed by the government for three years at a time after consultations with the universities, authorities representing research and development, the research institutes, and the main scientific organisations concerned.

The Central Board of Research Councils co-ordinates the work of the councils - for instance, submits proposals to the Ministry of Education on the distribution of funds and posts among the councils - and does general science policy planning independent of discipline.

The main assignments of the Academy of Finland are to finance research, to scrutinize research planning and the co-ordination of research carried out by the universities, state research institutes and industry, to promote the training of researchers and international scientific co-operation and to further scientific publication. The councils allot research posts and grants, plan research and researcher training, etc. in their own fields of science.

The financing of research and researcher training are the most important tasks of the Academy. Over 80% of the Academy's funds are used to cover the salaries of researchers and staff working on research projects. The Academy has some 400 research appointments and posts, which are held by persons chosen by the research councils. The research professors are appointed by the Preisdent of the Republic for a specific period of time on proposals by the Academy.

In the last few years the Academy has done important work in science policy planning. The Academy participated in the preparation of science policy programmes; and since 1973 it has been assigned to implement the plan and further the Science Policy Council programme "The outlines of Finnish science policy in the 1970s". The Academy has also promoted the research information system by compiling and publishing basic information on, for example, the financing of research and research personnel.

The status of the Academy of Finland is twofold: it is primarily a body of scientific researchers with independent authority over research funds of its own. On the other hand, it is expected to implement the government's science policy programme and to plan research policy.

The system for applied research and development

The overall responsibility for the development of the school system in Finland is entrusted to the Ministry of Education. The School Department of the Ministry is responsible for the development of general and vocational and technical education, and the Department for Higher Education and Research of the Ministry for the development of higher education. In the sphere of the School Department's activity there are two national boards responsible to the Ministry of Education. The National Board for General Education is responsible for the development of comprehensive and upper secondary education, while the National Board for Vocational Education is responsible for the development of education provided by the vocational and technical education institutions. The financing of applied educational research is mainly done through the Ministry of Education and these two national boards.

The Ministry of Education and the two national boards have the opportunity to use various assisting organs which are of major significance in all the development activities. These are the committees appointed by the government, the commissions appointed by the Ministry of Education and the working groups appointed by the Ministry and the national boards.

The Ministry of Education can launch and finance educational research projects. In addition, the Ministry supervises the research work commissioned by the national boards of general education and vocational education. The research projects launched by the Ministry of Education on general and vocational and technical education have as a rule been closely connected with the current development projects in these sectors of the education system. The objects of the research projects financed by the Ministry of Education have in the majority of cases been related to the operational structure of the education system; while the research carried out on the initiative of the national boards has been more closely connected with the development of the contents of education and teaching methods in accordance with the division of work between these two national boards. All these authorities as a rule commission the universities and other institutions of higher education to carry out their own research projects.

With regard to the quantity, research has been of the largest scale - and still is - in the operational sector of the National Board of General Education. Direction and supervision of research have been centralised in the Research and Development Bureau of the National Board of General Education. The majority of research projects are carried out at the Institute for Educational Research of the University of Jyväskylä. The assignments of the institute are the following:

- to conduct basic educational research and to undertake educational research for practical application;
- to promote the development of instruction in education subjects and of educational research at the universities and of university pedagogics in general; and
- to provide information both in Finland and abroad about educational research.

The Ministry of Education appoints two of the seven members of the Institute's board. The Institute consists of six departments:

- Department of Applied Research
- Department of School Research
- Department of Evaluation
- Department of Higher Education Research
- Department of Educational Research Methodology
- Department of Information and Documentation.

Most applied educational research directed towards the development of school and higher education is carried out at the Institute for Educational Research. The Ministry of Education and the National Board of General Education have allocated funds to the Institute, and special departments have been set up for school research and higher education research activities. The Evaluation Department carries out the design of school tests necessary for the measurement of school achievements. Also committees can commission the Institute for Educational Research to undertake research for their own purposes.

2.2 Expenditure

Evaluation of the expenditure incurred by research activities is difficult, because research is to a great extent integrated with the other experimental, planning and development activities financed in numerous cases by means of the same appropriations.

The total amount of R & D appropriations supporting the development of education has grown remarkably in the 1970s; from the 0.8 million Fmks in 1970 to 5.7 million Fmks in 1974 which implies an actual growth of 350% in 1970-74, ie an average increase of 46% a year. The increase was strongest in 1971-73 after which the growth ceased and started to decline in 1975 (in 1975, the actual decrease in comparison with the previous year was over 10%).

According to an investigation, the financing of education R & D has developed as follows:

TABLE 1000 marks

	1970	1971	1972	1973	1974	1975	1976	1977
Higher education research	200	500	770	1,310	1,450	1,370	1,270	1,210
National Board of General Education	580	1,200	1,600	2,050	2,600	2,800	2,200	2,200
National Board of Vocational Education		40	50	60	90	80	110	120
Educational Planning		300	750	1,260	1,560	1,340	1,270	1,270
	780	2,040	3,170	4,680	5,700	5,590	4,850	4,800

The above-mentioned appropriations include the funds used for the purposes of planning school experiments, investigations, seminar arrangements, etc. in addition to research.

2.3 Priorities

Primary and secondary education

The priority areas for educational research are defined on the basis of the current or planned development projects as regards the school system. With regard to research on general and vocational and technical education, the priority should in the coming few years be accorded to research related to the implementation of the secondary education reform. Research supervised by the Ministry of Education and the two national boards has in the last few years been orientated towards this purpose.

In connection with the secondary education reform, the Ministry of Education has initiated in particular a research project on the financial effects of the reform, a project on the educational channels between secondary and higher education, a project on the selection of students for the secondary education institutions and a project on pupils' guidance.

In the research supervised by the National Board of General Education priority has been shifted from research on comprehensive and upper secondary education to projects related to the secondary education reform. The priority areas of research undertaken by the National Board of General Education are illustrated by the projects on which the current experimentation and research activities have been concentrated. These are (1) a combined grade project, (2) a project on learning by objectives, (3) a differentiation project, (4) a school education project, (5) an initial instruction project and (6) a project on instruction in course form.

In the research activities initiated by the National Board of Vocational Education, priority has been accorded to projects related to the secondary education reform. In connection with preparations for the secondary education reform highest priority should be accorded to the launching of research projects and investigations on the interrelations in vocational and technical education, in the first instance on the relations between work tasks and education. This has not yet been possible because the universities and other institutions of higher education have no previous traditions in this kind of research, nor has there been time for establishing the new organisations required for this work. Therefore it was necessary to draft about 240 new vocational and technical education curricula in connection with the secondary education reform; the work was carried out by committees with the assistance of expert knowledge but without any direct research input.

The educational research section of the Academy of Finland drafted a development programme on educational research in 1977. The programme classifies the targets of educational research into four categories:

1. research on the tasks of education;
2. research on the formation of the structure of the school system and its operations;
3. research on the educational processes; and
4. research on educational resources.

The first category includes projects illustrating the connections between education and society. The second category contains research on the educational system and its development; this research is orientated towards structures, administration, guidance systems, regional distribution of education, participation in education and student flows. The third category contains research on educational objectives, study contents, learning and teaching strategies and teaching technologies. The fourth category contains research designed to investigate how great a share of the resources of society is used in education and for what reasons, and also what resources would be necessary for educational development taking into account the educational objectives set by society.

The programme does not set the categories mentioned or the included subjects in any order of priority. Instead, the programme sets out in order of priority the following challenges as regards educational research in general:

1. raising of the scientific level of educational research and strengthening of the development work based on scientific knowledge;
2. increase in the interdisciplinary approach to problems;
3. concentration on the study of large problem areas instead of separate, isolated one-subject projects which do not accumulate much information;
4. increase in the applicability and appropriateness of research with a view to the development of education.

Higher education

The priority areas in higher education research financed by the Ministry of Education have changed in the 1970s. During the first three years, the priority in R & D was clearly accorded to research on the administration of higher education;

this was a result of the then current reform plan for the internal administration of the institutions of higher education and the then ongoing public debate on this issue. The major area for research in 1973-74 was the development of higher education which in turn was directed by the extensive reform of the higher education curricula initiated at that time. Since 1975, R & D concerning the system of higher education has been more intensively directed towards supporting the planning of curriculum reform; research has been directed to the professional profiles of the various fields, choice of study career, development of teaching methods and the connections between the curricula of secondary and higher education. Research on the scope of higher education, development of its structure, and its regional effects constituted another major area. Today the follow-up of the higher education curriculum reform, R & D on supplementary education, the development of open university techniques and the research on the connections between secondary and higher education feature prominently in the research financed by the Department of Higher Education and Research of the Ministry of Education.

2.4 Dissemination of information on educational research to different target groups

The Institute for Educational Research plays a central role in the provision of information on educational research in Finland, since one of the national tasks assigned to it is to disseminate information about Finnish educational research both in Finland and abroad. For this purpose the institute has a special department for information and documentation.

Since 1977 the library of the University of Jyväskylä acted as the central scientific library for the behavioural sciences and physical education sciences. According to the proposals of the state committee in 1972, the Institute for Educational Research and the Jyväskylä University library would together constitute a body responsible for information and documentation services in the field of educational and psychological sciences in Finland. This status has, however, not been officially ratified, but at least some of the functions of a national information centre are carried out jointly by the two institutions.

The main channels for disseminating information on educational research among researchers are the research reports. Most research institutes have one or several report series of their own. The Institute for Educational Research publishes two series, in which there are about 200 pedagogical studies reported during 1974-77. As part of the institute's national information services it also regularly collects information on ongoing and completed educational research projects in the whole country, and this information is published in annual catalogues. Together with the English language version "Educational research in Finland in 19.." they are published in conformity with the principles of the EUDISED project of the Council for Cultural Co-operation.

From the point of view of a larger audience with different needs for information - eg busy administrators and teachers, who neither have the motivation nor the time to read thick reports - the research reports as such are not always quite adequate. Furthermore, the reports often concentrate on methodological questions instead of results, and are written in a technical scientific language. Therefore the importance of summarised information has been repeatedly emphasised during the last few years. The National Board of General Education regularly prepares summaries of research reports published within the framework of research and development work carried out under its aegis. It also publishes lists of educational research and experimental projects undertaken or supervised by its Research and Development Bureau. All reports published by the Institute for Educational Research contain an abstract in Finnish, Swedish and English for quick information and reference purposes, and a longer summary (2-5 pages) in the same languages.

Another important way to receive information about research is through the scientific journals and periodicals. The Finnish journal of education "Kasvatus", the only scientific educational journal in Finland, is published by the Institute for Educational Research six times a year. "Kasvatus" has a circulation of about 2,000. In addition to articles, surveys, debates, etc. it carries a variety of regular R & D material selected and prepared by the Institute. The most important is perhaps the annual Finnish bibliography of education, which covers all the major publications, including relevant articles in periodicals. The selection of material for this bibliography is done with a larger public in mind: not only for researchers but also teachers, students and administrators in the field of education. Furthermore, researchers are informed about recent research at seminars and conferences.

As far as administrators and teachers are concerned, the above-mentioned information sources are, at least in part, relevant for their information needs too. Teachers also get information through their own professional journals. The Institute for Educational Research has for some years prepared short abstracts in a non-technical language for the journal of Finnish teachers "Opettaja", which reaches practically every teacher within the system of general education. Within the framework of systematic in-service training for teachers since 1971 (three days a year) research-based information is also given to some extent. Research information is an integral part of training organised at the national In-service Training Institute for Teachers at Heinola, where about 100 courses are arranged annually.

Information dissemination to the general public, through newspapers and by the radio and television, is mainly concerned with the educational reforms in our country rather than with actual educational research.

3. FUTURE DEVELOPMENT

3.1 Trends and new measures

The connections between educational research and decision-making should be strengthened further. Research should also be increasingly integrated with experimentation and other development work. In addition, basic research should also be guaranteed by conducting some of the educational research as a long-term activity independent of the restrictions set by the decision-makers' current needs.

The reform of the secondary education curricula had to be carried out without any particular research input mainly because of the timetable. On the other hand, it would not have been possible to launch any useful research work with the resources available. Therefore, priority should in the future be accorded to such research as will render it possible to implement the coming extensive reform of the vocational and technical education curricula.

One basis for the promotion of R & D is provided by the proposals submitted in the report of the 1976 curriculum committee. The committee proposed the following with regard to research and other activities related to curriculum development:

1. The present amount of long-term basic research should be considerably increased since it creates the preconditions for the continuous development of curricula. This research should be organised primarily by the Academy of Finland and the Ministry of Education. For this purpose a special programme concerning

educational research should be drawn up by the Academy of Finland. (This programme has already been prepared as was mentioned above.) In addition, separate research programmes should be drawn up for pre-primary education, general education, secondary vocational and technical education and adult education defining clearly which of the tasks relate to long-term research and which to short-term applied research. These programmes should be worked out by educational level and grade in co-operation between the researchers of the Academy of Finland representing the fields concerned and the respective national boards, and the programmes should be handled by the planning organ introduced in item 3.

2. A long-term research project encompassing all the various levels of education should be worked out for each of the major content areas of general education (eg languages, the natural sciences, aesthetic education), and sufficient funds should be provided for them. These kinds of research project can be carried out at the various institutions of higher education and at the Institute for Educational Research. The various institutes of the universities should specialise in certain content areas. University teachers, eg professors of didactics for the various subjects, should be freed from R & D work in their own particular fields for a certain period of time.

3. Immediate preparations should be made for the establishment of a research institute to investigate division work, work technology and occupations and to serve the development of the connections between in particular the vocational education curricula, school and professional life as well as the development of vocational guidance. Similarly, the universities representing different fields and the teacher education units should undertake research on occupations in each field and on work technology.

4. Preparations should be made for the establishment of regional centres for the development and experimentation of curricula and sufficient resources should be set aside for their purposes. These centres should be formed from the teacher education or other university units as well as from selected school units representing different levels of education. Permanent experimentation and development activities should be carried out at the school units, and the university unit should be responsible for the scientific direction and follow-up of the work as well as for teachers' supplementary training. Regional development centres of this kind should act in close co-operation with the school department of the provincial government concerned.

Research was not connected with the planning and preparatory phase of the innovations in higher education, either. There are many reasons for this. First, there has been no distinct programme on the priority areas for the development of higher education or on the timetable for the planning and implementation of the innovations. The units carrying out the research found it difficult to direct their research activities towards important areas with a view to preparatory work. The timetable for the planning and implementation of numerous innovations has been so restricted that it has not always been possible to allow for the inclusion of R & D work financed by the Ministry of Education. The interest of the institutions of higher education in carrying out educational research has not been very great; this has made it difficult to recruit qualified researchers and constituted an obstacle to fruitful co-operation between the decision-makers and the units conducting the research. A further reason is that it has not yet been possible to use research to support preparatory work, nor is there any previous experience in this domain.

Intensification of research on higher education demands on the one hand development of co-operation between the decision-makers and the units responsible for education and research. A basis for this development is provided by in particular the preparatory work carried out under the auspices of the Academy of Finland where efforts have been made to strengthen the position of such research related to education in the spheres of the social sciences research and educational research, and also by the science policy programme drawn up by the institutions of higher education towards the end of the 1970s, on the basis of which the resources, the priority areas for research and the position of research can be evaluated from the point of view of educational research. On the other hand, this intensification of research requires of the central administration a more distinct definition of the development outlines, innovative plans and the timetable for preparing innovations in the higher education system as well as the drafting of an appropriate research programme. Then it will be possible to programme the research activities necessary for preparing and following up the implementation of the innovations in addition to sufficient extensive basic educational research.

FRANCE

Report of the Ministry of Education

1. ROLE OF RESEARCH

1.1 Special characteristics of the French education system which affect the role that educational research plays in it

Schools (pre-primary, primary and secondary)

Although there has been a strong trend towards administrative decentralisation in education in the last ten years, the French school sytem remains predominantly centralised. All measures establishing courses of study, timetables, syllabuses and examinations emanate from the central authority which means that any important changes in the existing organisation can be introduced only by legislation or national regulation.

It is one of the duties of school heads and the intermediate hierarchical authorities (rectors of académies, inspectors) to ensure strict compliance with the regulations, which are the same for every state school in the country (1). Also, their only resources, whether in staff or funds, are those allocated by the administration on the basis of criteria which are uniform throughout the country.

Teachers are civil servants, whose administrative status, service requirements, promotion, evaluation, transfer and so forth are all determined by imperative statutory provisions.

This "monolithic" quality is still much in evidence in everything concerning the general organisation of study and the administrative life of schools. If we look at teaching iteself, however, and the role of the teacher in his classroom, the situation is somewhat different. "Ministerial instructions", texts of a specifically pedagogical nature, give the teacher a fairly wide margin of freedom of adaptation. This liberalism is restricted, of course, by the teachers' obligation to adhere to the syllabus and even more rigorously in examination classes. French syllabuses, traditionally conceived as based on a linear instruction and rational progress, have been criticised for being so encyclopaedic in nature; the enabling measures of the Act of 11 July 1975, however, undeniably do much to moderate this tendency, and give educational objectives a real priority over purely cognitive ones.

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(1) They also apply in respect of those private schools which have concluded an association contract with the state.

Great value has traditionally been attached in France to the teacher's independence of mind and spontaneity; the official directives are designed to leave plenty of room within a general course of action (1), for the teacher's personal contribution. This is especially true in secondary education and it is because of this principle that it was long considered unnecessary, even improper, to give secondary teachers a solid training in teaching itself: experience, association with colleagues and reflection would suffice, it was believed, to enable neophytes rapidly to acquire all the necessary talent and authority.

This attitude is changing, of course, partly because of the development of team teaching but also because the findings of educational research must now be taken into account in practical teaching.

Institutions have changed too, in response to this shift in attitude. In 1954, the desire to give due heed to the qualitative aspects of the problems of teaching gave birth to the Institut pédagogique national (IPN), where a research department began operating a few years later. The subsequent expansion of the IPN led (in 1970) to its division into two separate public institutions: the Institut national de Recherche et de Documentation pédagogiques (INRDP) and the Office français des Techniques modernes d'Education (OFRATEME), both of which had research departments. Since 1974, all research activities have been united in the Institut national de Recherche pédagogique (INRP), while everything connected with "educational documentation" was transferred to the former OFRATEME, now the Centre national de Documentation pédagogique (CNDP).

The purpose of this latest reform of the research departments was, by relieving the Institute of all other tasks, to enable it to fulfil more satisfactorily its primary function, which may be defined thus: to co-ordinate, in keeping with education policy priorities, the research carried out as an integral part of the work of the Ministry of Education; to that end, to maintain all interlevel or interdisciplinary contacts for which a need may be felt; and to avoid dissipation and duplication of effort.

The INRP also keeps abreast of all educational studies and experiments conducted abroad or in France by bodies not coming under the Ministry of Education; in this field it also initiates and co-ordinates work whenever possible.

For further particulars of the organisation and operation of educational research and experimentation, please refer to part 2.1 below.

Higher education

(See the reply by the Ministry of Universities.)

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(1) "Ministerial instructions" are drafted by the inspectors-general of education, senior officials who are all former teachers.

1.2 Co-operation between researchers and decision-makers

In the broad sense, decisions are made by:

- parliament (legislative power);
- government (executive power),

and specifically by the Minister of Education and Minister of Universities. All decisions taken at other levels are by ministerial delegation. The powers delegated to schools of higher education and research are relatively wide, but at other levels of education they are usually confined to administrative matters.

a. At the legislative level

Only two Acts contain texts (Article 5 of the Act of 1 June 1971, No. 71-400 and Article 18 of the Act of 11 July 1975, No. 75-600) relating to educational research. Both are extremely brief; they simply instruct the government to organise educational experimentation while preserving the family's right to prefer traditional instruction for its children.

The brevity of these texts (1) does not mean that the parliamentary assemblies take no interest in the question. During the annual debate on the education budget and "Finance Act", the Minister is asked to supply specific information concerning the activities planned and in hand. He also answers written and oral questions by senators and deputies, in accordance with the procedure established by the Constitution.

b. At the level of the administration of primary and secondary schools

Since 1974 administrative responsibility for the organisation of primary and secondary instruction has been divided as follows among the departments of the Ministry of Education:

- Three "schools directorates" have been set up, for écoles, collèges and lycées. Under the Minister's responsibility, each of the three directors is responsible for defining educational policy at his level and for implementing that policy with resources at his disposal.

  The responsibilities of the director of lycées cover the following: the "long" (university preparatory) and "short" (vocational education lycées, formerly called collèges d'enseignement technique) secondary courses and supervision of apprenticeships and further education.

- The directorate-general of programming and co-ordination (DGPC) ensures consistency in the definition and implementation of education policy and co-ordinates investments. Together with the different directorates and departments of the central administration, and with the inspectorate-general, it draws up the Ministry's "general programme of activities" and programmes of studies and research in education and educational technology.

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(1) Which legally represent a necessary and sufficient foundation for the definition of a consistent statute for educational research.

Programmes of research and experimentation are the outcome of a combination of efforts and interaction:

- Each director of schools defines the objectives and priorities which in his view correspond, as far as theoretical investigation or experimental application are concerned, to the most important problems confronting him.

  If the planned activities entail experimentation as the term is defined by official terminology (see 2.1 below), they are implemented under the immediate responsibility of the director. If, on the other hand, they are more closely related to the work of the INRP (purely theoretical research or projects involving more scientific applications), the Institute takes them over, following the procedure described below.

- The director of the Institute, after consulting research workers and his scientific council, programmes a similar activity for his own institution.

- The two projects are then compared. Some discrepancy between them is only natural, since the INRP is effectively autonomous, but thus far it has never proved decisive. As an integral part of the educational apparatus, the Institute is in touch with major currents of thought and needs arising in the educational world, and could hardly do otherwise than fit its programmes to the concerns which are those of all the authorities.

- After arbitration and adjustment, carried out with the help of the DGPC, and within the limits of available resources, the INRP programme (which operates on an annual basis) is produced in its final form and submitted to the Minister for approval.

c. Co-operation with schools of higher education and research

University level schools plan their own research programmes in education and related sciences as in other fields. In some cases, we should add, their basic research may lead to applied research involving experimentation in primary and secondary schools; when it does they form joint teams, with the agreement of the relevant authorities, including teachers from the level concerned. The rule is that the INRP retains some degree of control over such projects.

Both Ministry of Education departments and the INRP work with the universities, commissioning studies and research whose results may be directly relevant to their own purposes. This type of co-operation is already well-established in the fields of linguistics (teaching of French) and mathematics. Conventions are signed in such cases, and there may be a financial contribution.

Similarly, the Centre national de la Recherche scientifique (CNRS, a public body in charge of the overall co-ordination of scientific research in France), subsidises university research projects within the framework of its own "programmed thematic projects". In 1978, two such projects were devoted to education.

Lastly, some schools which are technically attached to the Ministry of Universities are more particularly suited to conduct research of concern to the Ministry of Education, because they train teachers or assistants for employment in primary and secondary education. The *Ecoles normales supérieures* come into this category, as does the *Institut national d'Orientation professionnelle*, etc.

The total volume of university research dealing with education is considerable: an inventory published in 1975 listed 348 titles of dissertations or studies in progress. The scope of these projects varies enormously, of course, ranging from the simple individual doctoral dissertation to the projects of a noted team or laboratory.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents, with a view to the local development of education

It may be useful to observe that "local development" does not mean the same thing in France as it does in countries with a decentralised system of education. Institutionally, there is no way in which any substantial reform of the organisation of state education in France could emanate "from below".

Having said this, we must also say that the authorities are tireless in their efforts to encourage all the protagonists involved in education to join in every attempt at modernisation.

Many new ideas originate among the teachers themselves, as no one is in a better position to feel what is lacking in the present system and what young people need. That is why "spontaneous research", carried out by individual teachers or small teams working in a single school, is officially recognised and financed; *académie* rectors supervise this form of research.

In national projects, co-operation between researchers and teachers is a matter of course and raises few problems, presumably because both categories of staff are servants of the state in France and participation in projects is always voluntary. Furthermore, a Decree and Decision of 12 June 1972 established the principle of co-operation, by stipulating that all major projects must be accompanied by a convention defining the respective roles of the teachers and members of the agency responsible for the scientific side of the project. As a correlative, *conseils de perfectionnement*, composed of representatives of the administration, teachers, researchers, parents and pupils, have been set up in full scale experimental schools (1) and have a definite influence on the slant and organisation of experimentation.

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(1) "Full scale experimental schools" are those in which experimentation is most fully developed; schools in which only a fraction of pupils and teachers are affected by it are termed *chargés d'expérimentation*.

1.4 Contribution of research to reform in the classroom

A distinction must be made here between research (basic or applied) and experimentation. In the official terminology "research" applies to studies and investigations which are distinctly scientific and are carried out by specialised teams; "experimentation", on the other hand, covers the controlled testing of innovations whose widespread adoption is very probable or has already been decided. "Experimentation" is set up and inspected by ministerial departments (schools directorates, inspectorate-general of public education).

1.4.1 With regard to research, it is hard to evaluate its possible effect on decisions. One is tempted to say, at first glance, that its impact is small or even negligible, because there is no reform which can be explicitly linked to the findings of scientific studies or investigation. Two remarks must be made, however:

1. Although there may be no functional integration, a sort of osmosis takes place between research and decision-making authorities. When major educational reforms are being drafted advisory committees are always set up, with members who are specialists in a variety of fields. The directors of past or present research projects often sit on these bodies, and their members are always familiar with important work published in their field of specialisation.

Also, the inspectorate-general of public education plays an extremely active role in linking research and decision-making, and this must not be overlooked.

It can be argued that the findings of basic or applied research have influenced the reforms enacted in the last five years to varying degrees. For example, the introductory syllabuses in economic and social studies (history, geography, civic education) designed for the elementary course in pursuance of the Act of 11 July 1975 were to a large extent based on the work of the INRP. The addition of an introductory physical science course in the first form was preceded by five years of preliminary research and experimentation, etc.

2. The overall contribution of research to education policy should not be evaluated solely in terms of reforms enacted. As any change in the world of education is a long-term undertaking requiring lengthy study, adjustment and evaluation, the role of research is just as important in follow-up as it is in the opening stages. This may be seen every day in, for example, the teaching of French in primary schools: on this most sensitive subject the INRP has been conducting research for 10 years, in association for purposes of application, with the primary teacher-training schools. Also, and this is essential, the modernisation of French teaching in primary school has been established throughout the system for several years but this has not meant an end to research and thought, which are sustained by findings emanating from the classroom subsequent to the implementation of innovations defined in experimental situations.

The principle that research always precedes reform cannot thus be taken for granted; this is an area in which the a priori construction of "models" is always fraught with difficulties and stumbling-blocks.

1.4.2 With regard to experimentation: we have seen that it may either immediately precede or coincide with major changes. For instance, the general implementation of new syllabuses in the primary schools was preceded, a year earlier, by a preliminary application in a group of schools representing a significant sample. There could be no question of rigorous evaluation, but the experiment produced a body of information of great value in the drafting of official instructions, and in connection with the points requiring priority treatment in preparatory and training schemes for teachers.

1.5 Main obstacles to a greater impact of research in the classroom

The relations between educational research and general education policy are complex and sometimes difficult, for a number of reasons.

1.5.1 Educational research is a manifold activity, because it relates to a vast and shifting field of investigation and knowledge (educational problems move hand in hand with societies). Those responsible for education policy do not ordinarily expect research to produce immediate solutions to the urgent problems besetting them. They do not underrate its intellectual and scientific value, but even as they encourage it they also tend to regard it as a marginal activity. The situation is totally different here from the field of public health, for example, where the completion of a research project is known to be the necessary and, in some cases, sufficient prerequisite for very rapid alteration of a situation. The education system, on the contrary, possesses innate inertia, as the term is used in physics, with the result that response to incitements to change is invariably rather slow. It can thus be said that one of the main factors limiting the effectiveness of educational research is the impossibility of incorporating into an experiment all the pressures, oppositions and miscellaneous elements which can seriously distort the implementation of the innovation when it reaches the stage of widespread adoption.

1.5.2 Regarded as a scientific activity, educational research seems to have some trouble in defining its objectives and methods. This may be attributable to the following:

- In respect of objectives, it may be easy to say that "educational science" partakes of psychology, sociology, linguistics, etc and yet cannot be identified with any one of them, but it is much less simple to specify the particular ends of educational research. The problem does not arise only at the level of theory: it is constantly visible in the field of everyday experience. "Decision-makers" do not really know exactly what they can demand of researchers, while the latter are torn between their desire to satisfy the demands of scientific discipline and their desire to have some bearing upon a reality which is resistant to scientific analysis. Furthermore, the teachers themselves apparently place little trust in educational research, of which, moreover, they tend to be ignorant. This point should be stressed, because it may seem paradoxical: teaching is a profession upon whose members research apparently has but little impact.

- As far as methods are concerned there is, firstly, a major difficulty inherent in the subject itself: the complexity of data is such that research may be said to exhaust itself analysing it. To an outside observer it may look like an infinite series of retreating images, ever more minute descriptions of facts, having no perceptible results in the form of knowledge that will be useful to action.

The problem is intensified by the fact that the study of the personal and intellectual careers of the child and young person requires both a firm basis for comparison (the need for a reference school population, parallel to that in the experimental situation) and an observation extending over a number of years and applying to the same subjects, so that realities may be apprehended through concrete individual development. These methodological conditions imply long-term projects incompatible with the mobility of available resources.

In addition, the very nature of scientific investigation is often hard to define in education: the phenomena to be observed and the variables to be taken into consideration are multiple and interfere with one another. It is not easy to isolate them and, as a result, the validity of conclusions drawn from deliberately simplified data are often unreliable.

Lastly, the fact that research reports are frequently voluminous, and written in a highly technical language which makes them difficult of access to the uninitiated, is also significant.

1.5.3 Ultimately, all one can say on this subject is that educational research is in a paradoxical position: it has developed substantially in the last 10 years, it is now fully accepted by the institutions, and yet everyone is extremely hard-pressed to define its function. This general problem (which should not be allowed to overshadow the extremely tangible results obtained in specific projects, see 1.4 above) is now being investigated. Although one cannot predict the outcome, educational research in its present state may perhaps be said to suffer from a certain form of intellectualism, owing to the fact that it is still a matter for specialists. Any changes of approach that will render it more operational are much to be desired.

1.6 Steps taken to associate researchers in the planning and evaluation of experiments and in the implementation of subsequent innovations

Researchers are very often involved in the planning and evaluation of the experiments in which they take part.

In the case, say, of research on the "prospective model" for lower secondary schools which will be discussed further on, the experimental plan and evaluation instruments were prepared by the INRP, as scientific supervisor of the project. Teachers also were extensively associated with this work, however, through numerous courses and study days, and other authorities were consulted as well, such as psychologists, linguists, etc.

With regard to the implementation of the findings of experimentation, it is the heads of schools, the inspectorate-general and other inspectorates which are in charge of both instituting and following up the procedure. It is not impossible, of course, for researchers to be involved in this phase of the proceedings as well, as they are, for example, in the application of the new primary school mathematics and French curricula, which are being evaluated by the INRP in close liaison with the inspectorate-general.

1.7 Familiarisation of student and practising teachers with educational research

Activity in this area of information and permanent education should certainly be intensified. However, the following already exist:

- publications of the INRP (*Revue française de Pédagogie*) and CNDP (*Media*);
- some television and radio broadcasts in the CNDP's school radio-television programme;
- a considerable amount of information is circulated by regional educational documentation centres (CRDP), offspring of the CNDP;
- a large number of short courses organised at national or *académie* (subregional) levels;
- a few long (one academic year) courses, such as the St-Cloud teacher training school's audio-visual course.

As far as future teachers are concerned, the curricula of their training schools (ordinary teacher training schools and regional education centres) include an introduction to the problems and techniques of research. An added effort will need to be made here as well, however, following the institution of the new secondary basic teacher training schools.

1.8 Rationalisation and cost-saving through research

As teaching techniques become more highly perfected and costly, there is less room for empiricism. A number of surveys have shown that French schools are abundantly endowed with audio-visual equipment but use it either too little or badly. The reason for this, no doubt, is that teachers have not been taught how to work with these resources; but technology's invasion of the classroom is irreversible.

In addition, the foreseeable changes in the educational process are so radical that they will necessitate a concerted strategy. In future, it will not be possible to rely on individual inspiration and the teacher's talents. A transformation as far-reaching as that from the lesson-monologue to individualised instruction, for example, is so remote from ingrained habit that it must be thoroughly prepared in advance or chaos will certainly ensue, jeopardising essential values and wasting very substantial investments.

These ideas are gradually taking hold, but it cannot be denied that thus far research has done little to assist rationalisation and cost-saving in education. In fact, the view that most innovations ultimately lead only to the spending of more money is widely held, and may even be true in the short term, although false in the medium and long terms, in so far as reforms mean improved productivity of the educational system.

This is a constant source of preoccupation to the authorities, and cost-benefit studies are now being incorporated into research programmes. The experiments on the design of a lower secondary "prospective model", for example, will include an exact evaluation of the budgetary implications of its adoption throughout the country, as will the research programme on the adoption of the unit/credit system in technical and vocational education.

1.9 The role of educational research at post-secondary level

See the reply of the Ministry of Universities.

2. GENERAL FRAMEWORK

2.1 Promotion and planning of educational research

The reply to this question will be found throughout the first part of the report.

2.2 Financing of educational research

It is difficult to express the amount allocated to educational research in exact figures, as those engaging in it are more often than not occupied with other projects at the same time, and experimental schools are simultaneously concerned with a whole range of objectives: pupil reception, teacher training, educational animation, production of teaching resources , etc.

For the 1977 budget year the amounts specifically allocated to research and experimentation are divided, roughly, as follows:

- Institut national de Recherche pédagogique:	45 500 000 F
- Supplementary staff and operating funds for projects carried out in schools:	18 600 000 F 73 jobs
- Studies and experiments financed directly by the ministry	4 600 000 F
- Grants to tertiary schools for research concerning primary and secondary education:	1 000 000 F
Total:	69 700 000 F 73 jobs

2.3 Priorities

There are four types of research: research concerning the national curriculum, conducted by the INRP; ministerial experimentation; decentralized or "spontaneous" research; university research commissioned by the INRP or Ministry of Education.

2.3.1 Role of the INRP

2.3.1.1 Principles

With regard to educational research, the INRP is generally responsible for "study" projects as well as for applied research conducted according to strict experimental procedure with a view to producing data for use in scientific programmes. In carrying out these activities, the INRP is divided into six departments and an associated centre (the Sèvres international centre for educational studies).

The INRP conducts two series of projects, one originating in the institute itself (although submitted to the ministry and approved by it) and the other, fewer in number, requested by the ministry and supervised by the relevant ministerial directorate. All are characterised by high methodological standards. They cover a wide range of themes and relate to both general education (structures) and the teaching of different subjects or educational technology. Their fields of application are state educational institutions (écoles, collèges and lycées) classified as either chargés d'expérimentation (for a particular project and length of time) or as experimental schools, whose function is to serve as a full-time proving-ground for educational experiments. The ministry draws up annual lists of both types of school. As an indication, we mention some of the more representative projects in hand in 1977-78 in the various INRP departments, which were engaging in a total of roughly 90 projects during the year.

2.3.1.2 Main functions and activities of the INRP departments

1. The aims of the Department of Historical Documentary and Comparative Research are as follows:

- to plan and implement measures promoting research into the history of education;

- to carry out documentary studies on general education problems in France and abroad;

- to assist, using material assembled by the relevant departments, in the production of documentation for researchers engaging in research into the history of education and educational sciences, in the form of classified and catalogued information; a computerised system is employed for this purpose.

2. The goals of the Department of Studies and Applied Research concerning General Instruction and School Life are as follows:

- to study the functioning - and especially the dysfunctions - of the educational system with a view to their objective description and causal explanation;

- to observe and evaluate the achievement of school in relation to its assigned objectives;

- to devise, and where relevant apply on a small scale and for purposes of observation only, and to evaluate, new contents, methods and structures designed to improve the effectiveness of school, either overall or in specific subjects;

- to record, analyse and evaluate spontaneous innovations relating to general instruction and school life;

- to compile national and international documentation on research applied to general instruction and school life.

The work of this department, as may be seen, covers a very wide area and thus it is the largest in the institute. It employs 92 people full-time (administrators, teacher-researchers, psychologists) and works in liaison with a large number of teachers in schools, who may be given additional free periods or payment for overtime in return for their co-operation.

Major projects in progress

Teaching in general

- Collèges - differentiated teaching (adapted to individual situations in an unsteamed organisation);

  - definition of and experimentation with a prospective model for lower secondary education;

  - conditions for the organisation of lower secondary structures favourable to the introduction of autonomous work.

- Lycées - design of mechanisms for evaluating secondary teaching;

  - research into autonomous work and interdisciplinary working methods at secondary level (general and technical).

- Interlevel (collèges and lycées) - study of the importance of mathematics as a selection factor.

Individual subjects

- French - description and evaluation of French teaching systems at primary level;

  - study of the relationship between the written and spoken language (mother tongue) at lower secondary level.

- Mathematics - continuous evaluation system for primary school mathematics;

  - study of the contribution of mathematics to other subjects (physics, biology, human sciences and technology).

- Modern languages - early teaching of English;

  - English; preparation of a grammar programme covering the 1st to 4th forms.

- Human sciences - problems raised by the introduction of stimulus subjects in primary school;

  - study of geographical environments, attempt to define a national syllabus for 1st and 2nd forms. Evaluation;

  - work on a secondary-level objective-based programme for history, geography, basic economics, social and political sciences, and for introductory economics and sociology.

- Arts - plastic arts in primary school.

Educational technology

- Introduction of audio-visual media at primary level;

- Effects of the widespread introduction of educational technology at school.

Computer sciences

- Stimulation of awareness of the uses of automatic data processing in general subject teaching in *lycées* equipped with computers.

Section for research into special education and adjustment to school

- Evaluation of overall motor functions of children aged 15 to 36 months;

- Genetic study of right- and lefthandedness in children aged 3 to 6 years;

- Research into conditions favourable to spontaneous verbal expression in children aged 3 to 6;

- Transition from infant to primary school;

- Difficulties experienced by children beginning academic learning at primary school.

3. The tasks of the Department for Study and Research into Technological Education are as follows:

- to observe and evaluate the present achievement of schools giving technological instruction in relation to their assigned objectives;

- to study the working of the different technological courses with a view to defining the variables conditioning it and explaining its characteristics;

- to devise, and where relevant apply on a small scale and for purposes of observation only, and to evaluate, new contents, methods and structures in technological education intended to improve the effectiveness of this type of education, in general or in specific subjects;

- to record, analyse and evaluate spontaneous innovations in the field of technological education;

- to compile national and international documentation on research applied to technological education.

As an indication, the following are examples of research carried out in 1977-78 by this department:

- definition of an experimental workshop technology based on a conceptualised presentation of mechanical manufacture in technical education schools;

- causes of failure and dropout in technical education schools;

- use of simulation procedures in industrial technical education.

4. The Department of Research into Applications of Communications Technologies studies the following:

- learning behaviours of the pupil in contact with modern communication media;

- teaching practices employing such media or designed to demonstrate their importance in civilisation (mainly mass media);

- the degree of scientific exactitude and special handling required in the adaptation of media for teaching purposes.

Examples of projects carried out by this department:

- computer-assisted teaching;

- new teaching aids: "Logo"; the object of this project is to test in a French educational environment the experimental results obtained in America, tending to indicate that an advanced technology - in this case the computer - encourages the rapid development of problem-solving techniques in children;

- compact audiovisual aids and creativity in the plastic arts;

- socialisation of children by means of collective educational equipment (resource centres);

- research into the use of the "symphony" satellite in education;

- information bank on educational programming.

5. The Department of Educational Psycho-sociology plans, organises and conducts, from a sociological, psychological and psycho-sociological viewpoint, surveys, comparative studies and basic and applied research projects relating to the following:

- processes and structures of educational institutions;
- recruitment, initial and further training of personnel for educational institutions;
- personal and group interaction in educational systems and institutions.

Examples of research carried out by this department:

- research into the theory and practice of the helping relationship in education;
- the (upper) secondary school and its interactions with the social, economic and cultural environment;
- paedogogical and psychological effects of the organisation of school time;
- methodology of training courses.

6. The Department of Bio-medical Research institutes or co-ordinates research into the following:

- implications of physiological development and biological balance, on the pupil's work and behaviour at school;
- neuro-physiological phenomena associated with learning activities;
- effects of pathological or therapeutic factors on schooling;
- effects of learning conditions, school setting and environment on the physiological development and biological balance of the child or adolescent;
- reciprocal influences of schooling and the child's anatomo-physiology in his natural environment;
- analysis of the characteristics of the pupil's "work stations" in a study or learning situation, from the viewpoint of school ergonomics.

This is a newly-created department and is still being organised.

7. The International Centre for Educational Studies is composed of the following:

- a specialised section for the reception and further training of teachers. All of the research conducted by this section deals with the problems of the educational community and school life;
- the bureau for the teaching of French language and civilisation abroad, which is not strictly a research body.

A. MINISTERIAL EXPERIMENTATION

Whereas the INRP is more particularly concerned with projects of the study type and applied research designed to produce data of use in scientific work, the Ministry remains responsible for everything connected with experimentation, that is, projects designed to test educational structures, methods or contents with a view to their general adoption.

These projects are divided among three directorates: *écoles*, *collèges* and *lycées*:

1. Ecoles directorate

- primary school French: research into the paedagogical conditions relevant to the teaching of French as a means of communication and expression, in conjunction with the plan to modernise the teaching of French in primary schools;
- early learning of English in primary schools;
- experimentation and evaluation relating to the social science stimulation activities;
- preparation of ministerial instructions concerning stimulation activities;
- follow-up of new educational forms: open schools, schools in new towns;
- critical study, in experimental conditions, of different types of remedial teaching at primary level (carried out in liaison with the INRP);
- study of supportive teaching in schools attended by pupils from severely disadvantaged environments.

2. Collèges directorate

A. Some projects are mainly concerned with the problems raised by the introduction of supportive teaching and further exploration work starting in the 1st form.

- Remedial work in French, mathematics and modern language.

  The purpose of this research is to distinguish between the basic knowledge and skills covered by the curriculum, to observe pupils, evaluate performance and devise teaching methods to suit the different types of difficulty encountered.

  A project for the evaluation of this experimentation has been set up in liaison with a university-level institution.

- Further exploration activities in the paedogogical context of autonomous work.

B. Others are more particularly concerned with the following:

a. Individual subjects

- teaching spelling;
- experimentation in classical languages with a view to the introduction of an optional course;
- civic education research in preparation for the introduction of a new way of teaching civics, centred on life out of school and making full use of dynamic methods;
- teaching experiment in the paedogogy of French (in association with the university sector).

b. The introduction of new courses

- pluridisciplinary projects based on experiments with musical creativity;
- the paedogogy of manual and technical education. The object of this research is the introduction of activities designed to develop concrete intelligence, achieve personality balance within the framework of general education, and devise specific themes for the assemblage and manufacture of objects;
- in association with a university research team: observation of pupils engaging in manual and technical work, with a view to evaluation and guidance.

c. Development of the use of audio-visual resources in education

- the use of audio-visual resources in the experimental introduction of biology inmixed-ability 1st and 2nd form classes;
- evaluation of audio-visual productions of a closed-circuit television network with a view to possible widespread application.

d. Problems relating to the co-ordination of different levels ot education

- evaluation of the situation of a school population in the first year in a collège;
- co-ordination of mathematics teaching between the cours moyen 2 (end of primary schooling) and 1st form of secondary education.

These two projects are being carried out by the INRP at the request of the collèges directorate.

3. Lycées directorate

The following are some of the more representative of the many experiments being carried out by the lycées directorate:

a. General

- new upper secondary structures (preparation for the introduction of the reform);
- "autonomous work" at upper secondary level (formerly known as "independent study");
- experiments in the evaluation of the experimental method of teaching natural science;
- new upper secondary physics syllabuses;
- new upper secondary French syllabuses.

b. Technological education

- continuous monitoring of learning in technical secondary schools (this very large-scale project is now nearing completion);
- experimentation with ways of teaching the use of new materials;
- use of audio-visual techniques in training instructors for national apprenticeship teacher training schools;
- automation of mechanical manufacturing;
- automated machining and establishment of scales by electronic calculator;

- individualised remedial teaching, experimentation with work stations designed to give greater autonomy and initiative to pupils.

The _lycées_ directorate has also asked the INRP to undertake research representing an extension or further development of the above:

- research into objective-based syllabuses for history, geography, introductory economics and social and political science;
- research into interdisciplinary teaching;
- evaluation of the results of teaching-for-autonomy in the help given to pupils in difficulty;
- research into industrial data processing and simulation in technical education.

B. "SPONTANEOUS" RESEARCH

Alongside the research conducted in a national context by the INRP or ministerial directorates, there are a number of "spontaneous" projects. These are undertaken at the level of the _académie_ (subregional administrative entity), authorised by the relevant rector, and proposed by the _conseils académiques de la recherche pédagogique_. A census taken by the INRP for 1975-76 produced a total of 1100 projects covering every feature of education: school life, educational psychology, general education, individual subjects. Project themes are widely diversified, but the following are among those most frequently found:

- introduction to ecology and study of the environment, in pluridisciplinary teams ;
- autonomous work ;
- optional stimulation subjects of the workshop type ;
- modern language teaching (English, German, Spanish) at primary school ;
- experimentation with different forms of remedial teaching in various subjects, in lower and upper secondary schools ;
- differentiated teaching groups ;
- pluridisciplinary teaching ;
- use of audio-visual aids ;
- algorithms and physics problems ;
- experimental physics;
- introduction of dramatic expression techniques in French lessons, etc .

The activities coming under the heading of "spontaneous research" are often much more akin to individual innovations than to research in the strict sense; nevertheless, they are highly useful on two accounts:

- Through them teachers can acquire or recover enthusiasm for their work, by becoming involved in it and thereby involving their pupils. Such activities are an excellent psychological preparation for the development of a reform;
- "Spontaneous" research has often been the "hot-house" for structured research. It provides invaluable information for "official" researchers and decision-makers, regarding the worries and aspirations of the ordinary classroom teacher.

C. UNIVERSITY RESEARCH

In addition to the national research programme and spontaneous activities described above, some research originates in the university. It is carried out either directly by university teaching and research units, or by laboratories or institutes attached to such bodies as the Ecole pratique des hautes études or the Centre national de la recherche scientifique. An inventory of these projects in France, published in 1975, lists 446 items, 348 of them for universities and 98 for the INRP. University educational research, thus, represents roughly two-thirds of the total.

For the general organisation of this research see the reply of the Ministry of Universities.

The Ministry of Education also "places orders" with university-level institutions for research relating to primary and secondary education, and subsidises the relevant projects. In 1977-78, 14 such projects were in progress.

2.4 Dissemination of information

Apart from private publishing and press (chiefly the periodical Education, which is read by many teachers), information relating to educational research is disseminated by the INRP in a number of publications:

- the Revue française de pédagogie, quarterly, with an international readership;
- Recherche pédagogique, a news bulletin, of which a hundred issues have now appeared; this is a particularly important publication, as it contains the results of the institute's own research projects.

The Revue française de pédagogie and Recherche pédagogique are both available to teachers either by subscription or through the 23 regional and 61 département educational documentation centres.

For members of research teams the INRP also publishes several series of a more technical, mimeographed "liaison bulletin" (primary, primary school French, human sciences,etc).

Lastly, articles relating to research are often published in scientific reviews or in the regional educational information newsheets put out by CRDPs.

2.5 Impact of research on educational development and innovation

The first part of this report covers this question.

3. FUTURE DEVELOPMENTS

3.1 Trends in the research policy of the Ministry of Education

In the field of education, the incorporation of research into the processes of decision-making raises delicate problems as we have seen. In France and, apparently, in most other member states of the Council of Europe, awareness of this situation has not failed to provoke a sense of disenchantment among the authorities. Further, the implications of the economic crisis greatly restrict growth prospects in this sector.

Nevertheless, every effort is made to use existing resources to the best effect, by the following means:

1. by explaining to the centres of decision which directions should be given priority in future research. For example, the development of remedial teaching methods, with a view to more highly individualised teaching, is of capital importance for the future of lower secondary education. After consultation between the collèges directorate and the INRP, the theme has accordingly been incorporated into most of the institute's programmes.

2. by adopting more stringent criteria in the programming of studies, research projects and experimentation, to avoid duplication and also to encourage interdisciplinary projects, often a valuable means of grasping the essential aspects of a complex reality.

   From this point of view, the regrouping of all research teams under the authority of the Ministry of Education into a single public body - the INRP - should prove a very beneficial move.

3. lastly, by ensuring that available resources are used as rationally as possible, chiefly by providing for the transfer of funds from one project, team or school to another, in response to programming demands. The idea of the institutionalised experimental school (pilot school, pilot lycée,etc) has proved to be both expensive and ineffective, in the sense that it is an impediment to the mobility of research and experiments, and mobility is a sure sign of vitality; on this account the transfer policy is all the more realistic and healthy.

3.2 Intensified European co-operation

In Europe, there has been much less co-operation in the field of educational research than one might have anticipated, in view of the similarities in the problems facing every country in our part of the world.

With the activities of the ad hoc committee on educational research set up by the CCC, and of the "European contact workshops", the Council of Europe has made a signal attempt to set in motion a current of exchange. Results have been positive, but seem not to have moved beyond a circle of eminent specialists.

One can but hope that the whole question of European co-operation in the field of educational research will be re-examined because, we repeat, there is in this field a body of matters of concern whose converging features cannot be totally invalidated by linguistic barriers or institutional particularities.

FRANCE

Report of the Ministry of Universities

1. ROLE OF EDUCATIONAL RESEARCH

1.1 Special characteristics of the French system of higher education and their influence on educational research

The Act of 1968 (loi d'orientation) gives extensive autonomy to universities and the education and research units (UER) composing them, but as far as the content of courses is concerned this autonomy is somewhat restricted because the central authority still lays down the broad lines of syllabuses leading to "State diplomas", which are the most important qualifications for professional purposes. The texts (decrees and orders) relating to those diplomas set only standard minimum rules, however (total duration of instruction, study of certain groups of subjects, work in small groups for projects or special assignments). The system allows establishments scope for adaptation and also a freedom of interpretation which clearly distinguish this sector from that of the school.

Autonomy in research is also considerable, and, after consulting the University Scientific Council, the UERs can arrange their programmes as they wish, within the limits of the money allocated to them. In the interests of educational reform, the Ministry of Universities has tried for several years to co-ordinate more closely the activities of teams which, although working in neighbouring fields, were not always aware of one another; the object of this is to increase the impact of the research undertaken. In this field, the central administration intervenes as specified in the following paragraphs.

1.2 Co-operation between researchers and decision-makers

This has manifestly become increasingly essential, and is gradually gaining ground and progressing very favourably for the research in hand. Fields of research are determined by the central administration, but experiments are freely chosen by university research workers, after joint examination of the projects presented, however.

Such institutional or de facto co-operation takes place in a particular framework.

1.2.1 Powers of decision

The powers of decision, in the broadest sense, are divided as follows:

- the legislative authority (parliament). Article 1 of the Act of 12 November 1968 stipulates that "universities shall ensure, in respect of teaching staff and research workers, that instruction and research may proceed in the conditions of independence and security which are essential to thought and intellectual creation". This shows the Assemblies' concern for research, both scientific and educational. Furthermore, when the Ministry of Universities' budget is examined each year, the Minister is asked to give the finance committees of both chambers information regarding new or continuing educational reform projects. He also answers written or oral questions put by senators and deputies in accordance with constitutional procedure.

- the issue of regulations. Since 1974 higher education has been independent of other forms of education as far as ministerial structures are concerned. The institution of a separate Secretariat of State (Order of 20 June 1974), followed by a Ministry of Universities (decree of 10 January 1978), transferred to the Minister of Universities the attributions relating to schools and other institutes of higher education and research which had previously been those of the Minister of Education.

A decree and order dated 30 July and 16 September 1976 defined the organisation of the central administration in this way. Alongside the creation of general or special directorates or departments, a "research mission" was also set up to ensure closer liaison between the activities of the Centre national de la Recherche scientifique (CNRS), the universities, and the Ministry's research centres.

Educational experimentation and the introduction of modern educational techniques, most of which make use of new technologies, are supervised and co-ordinated at the level of the central administration. The new techniques of education office, attached to the Directorate of General Affairs and Finance, has responsibility for distance-teaching at university level as well as for teaching reforms (grants for research carried out by universities) and for defining an audio-visual policy for higher education.

The same office is responsible for liaison between the Ministry of Education (Directorate of Programme and Co-ordination) and the universities carrying out educational research projects relating to the primary and secondary levels.

1.2.2 Advisory bodies

The Act of 12 November 1968 instituted (Art. 9) a national council for higher education and research, whose role is "to prepare a long-term plan for higher education and research, in association with the bodies responsible for shorter-term national plans".

Decree No. 71-147 of 14 February 1971 founded a conference of university presidents; one of the subsidiary committees responsible for preparing its deliberations is a committee on teaching methods, which is more particularly concerned with the problems of teaching reform.

1.2.3 Higher education and research establishments

As said before, the universities and comparable schools decide their own educational research programmes within the framework of the themes chosen by the central administration (see 2.3 below).

The central administration's research projects are carried out under conventions, involving a financial contribution for 2 or 3 years.

In all cases grants are earmarked for schools which undertake to provide the resources needed to implement new educational forms whose interest and value have been established by research.

The link between schools and Ministry is maintained throughout the research programme by contact with research workers and annual reports.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents

In French higher education, members of the teaching staff are at the same time researchers, which makes for easy contact between members of teams and facilitates revision of researchers' teaching in response to positive results in their projects.

In addition, local administrators, who have to establish the financial details of projects with the researchers and also to administer the funds allocated by the central administration, co-operate perforce with research workers.

Co-operation is more effective when an experiment has been a success and the school must furnish the resources needed to apply the results of research in regular teaching.

1.4 Contribution of research to reform in the classroom

The reform of teaching methods should not be an end in itself but a means of educating more effectively. Research with a view to improving the educational system tends of necessity to challenge the system's mechanisms, but should make no fundamental change in its objectives or general framework; it should simply bring about gradual adjustments in a way that will not be prejudicial to the students who are the subjects of experiments with new methods.

Subsequent to research carried out by several teams, the results of which were co-ordinated by the central administration, audio-visual methods have been gradually introduced into various subjects, chiefly modern languages, medicine, odontology, psychology, economics and education. The process is the same with regard to distance-teaching, where a more rational use of the media is being achieved by means of experiments carried out in university distance-teaching centres. Programmed instruction methods, with the help of computers or teaching machines, were devised and tested by a series of teams which were conducting research in technology, medicine, chemistry, mathematics, modern languages and educational psychology. By means of these experiments the impact of new teaching methods can be measured, and the teaching methods employed in higher education gradually reformed.

1.5 Main obstacles to a greater impact of research on the classroom

There are not a large number of researchers involved in research relating to higher education, because the universities advisory committee has not yet attached sufficient importance to this type of work for career purposes. It is something of a novelty, thus, a relative newcomer to a system which has its own consistency and dynamics and tends to adhere to them. As the generator of occasionally radical change in teaching procedure, it inevitably encounters impediments and resistance on the part of individuals as well as of the system.

Further, qualitative improvements in education generally involve increased costs, at least initially, and the economics of a system often outweigh its educational efficiency in the eyes of decision-makers.

Also, teams of research workers and teaching staff must become better acquainted and their work more closely co-ordinated, in order that all useful results of experiments may be turned to use.

It is often difficult to achieve this end in reality, although it would increase the effectiveness of educational research, largely because of the persistence of traditional partitions in French universities.

1.6 Rationalisation and cost-saving through research

The fact that experimentation has led to the introduction of new methods or techniques (audio-visual/computers/distance-teaching) into the classroom was mentioned under 1.4. To some extent these innovations have rationalised the educational process in a variety of fields. But it soon became apparent, with regard to audio-visual aids for example, that since these techniques were costly or were found hard to use by teachers, a preliminary period of motivation was needed followed by training in the new techniques. Effort was accordingly concentrated on this aspect and a carefully-structured organisation was set up both nationally and in the universities. A complete network of audio-visual centres has gradually been built up: two-thirds of all tertiary schools now possess them. Most of these centres function as general services, their main activities being to manage equipment, produce educational material, give teacher training courses; in some cases they give instruction in audio-visual techniques in the form of specialised unités de valeur or complete courses (eg degree in audio-visual techniques). As a result of this organisation based on the findings of past research, equipment is now being used more often and to better effect. The material produced has become less expensive and is being widely distributed. Ultimately the system represents a cost-saving.

With regard to distance-teaching at university level, research has been carried out to determine the impact of the different media (radio, television, cassette recordings). Their cost-efficiency studies were undertaken so that choices could be rationalised, leading to a closer correspondence between the media employed and the particular type of instruction or target group. This again has meant a saving.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

The entire first part of the report answers this question.

2.2 Expenditure

Until 1975 educational reform contracts for the tertiary level were financed under Chapter 36-15, Sub-head 79, for 4 million francs.

Beginning in 1976 this item was transferred to Sub-head 79 of Chapter 36-11, and the present budget is 2.6 million francs. The amount was the same in 1977 and 1978.

The allocation is for operational purposes and is used to enable teams to purchase the small items needed for their experiments, to pay short-term staff, purchase machine time (computers) and cover operational expenses proper (non-durable equipment, documentation, surveys, travel, etc). 40% of the budget is earmarked for research carried out by universities relating to primary and secondary education and 60% is for higher education.

These figures apply only to research in the narrow sense, however, and take no account of the universities' efforts to improve the quality of instruction and training which are financed by their operational budgets.

In 1978, the Ministry of Universities gave 6.85 million francs for the activities of institutes conducting research on the teaching of mathematics (IREM).

2.3 Priorities

In recent years, by means of earmarked grants the Ministry of Universities has directed educational research carried out by university-level schools towards the fields of study and investigation which have been given priority, namely: educational technology (computer-assisted or audio-visual instruction), educational sciences and subject teaching.

The universities' efforts in these fields in the last two years have raised the number of research teams from 73 in 1976 to 115 at the end of 1977. Teams now tend to have more members, and experiments seldom last more than two years.

For 1977, contracts were divided as follows:

- Educational technology data processing: computer-assisted and teaching-machine instruction	32
- Audio-visual	25
- Educational sciences	36
- Subject teaching	24
Total	117

A proportion (40%) of these projects concerns primary and secondary education; they are selected by agreement between the Ministry of Universities and Ministry of Education. Their value to higher education is incontestable, because fundamental research often leads to applied research in which the primary and secondary schools provide an ideal terrain for experimentation.

2.4 Dissemination of information

The Ministry of Universities is anxious to ensure a wide circulation of the findings of research.

To this end it regularly publishes a catalogue of the research projects it supports and seeks to ensure that the publication is widely distributed among university research workers. It also attempts to maintain close contacts with the delegation-general for scientific and technical research, the CNRS and the institute for research into automatic data-processing, with regard to both the objectives and results of research.

With the aid of the Ministry of Universities, some universities are arranging meetings of research workers who have been involved in projects in related areas, so that they may become better acquainted, assess the progress of their work and attempt to derive material of general relevance from it.

A new need has arisen, for data banks, networks for information and audio-visual documentation through which ideas and material may be exchanged. The Ministry of Universities is encouraging the development of this system.

2.5 Impact of research on educational development and innovation

This question has been answered in the first part of the report.

3. FUTURE DEVELOPMENTS

3.1 Trends and new measures

The new approach which is gradually emerging entails more extensive co-operation between universities and disciplines. In this connection research dealing with audio-visual resources, computer-assisted teaching and distance-teaching is particularly significant.

3.2 Intensified European co-operation

The Ministry of Universities has been increasingly closely associated with the studies and research carried out by UNESCO and the Council of Europe in the fields of educational technology and reform.

UNESCO is undertaking to survey recent research into the cost-efficiency of new educational techniques; for this purpose it wishes to bring together and compare the views of economists, teachers, decision-makers and project directors.

The Council of Europe has created the network, EUDISED research and development and has carried out work with a view to setting up a EUDISED audiovisual network. Their object is to circulate a larger body of information and make possible exchanges of material among network members.

Thanks to these international organisations, co-operation between the people involved in educational research projects undertaken in their member countries is increasing and becoming more effective.

IRELAND

1. THE ROLE OF RESEARCH

While no formal surveys have been carried out which would provide quantified data in reply to the queries raised in this section, we can state that the importance of research as a guide both to policy formation and to day-to-day practices in the school system is being more widely recognised and accepted. Reseachers have co-operated with decision-makers at the national level, both by participation in various activities relevant to policy such as those of commissions and by informal discussions with decision-makers at the planning stages of research projects. They have also co-operated with teachers and managers at the local level by lectures, participation in seminars and other activities, especially through using teacher centres (see below), as well as by publishing in some popular media and in teacher journals.

The colleges of education and the university departments of education introduce trainee teachers to an appreciation of the potential of educational research during their training courses, and this subject is also included in in-service courses organised for teachers by the Department of Education.

2. GENERAL FRAMEWORK

The special nature of the Irish educational system and its traditions must be taken into account in evaluating the procedures used for encouraging research and the dissemination of research results. In general it may be said of the main primary, secondary and university systems that, compared with most other European countries, ours is an aided rather than an administered system and that our schools, colleges and universities have a long tradition of autonomy in regard to many issues which would be a matter of central or regional policy-making in most other European countries. In addition the relatively small size of the country both in area and in population must be considered and also the fact that educational research policy in the modern sense is of recent origin in Ireland. However, in a relatively short period acknowledgement of the importance of research has grown and is continuing to grow.

2.1 Promotion, planning and financing of educational research

There are several mechanisms used to promote educational research in Ireland. First, there is an educational research centre attached to one of our major teacher training colleges, St Patrick's College, Drumcondra. This agency is in part funded by the Department of Education but has also had considerable success in getting outside funding for particular projects. Second, the major national research agency on social and economic issues, the Economic and Social Research Institute, engages from time to time in researc in those areas where the educational system and the general social and economic system overlap. Third, the Department of Education operates a grant system whereby applicants, mainly from universities, who wish to engage in educational research may be financially supported. The universities also engage in educational research activities which are not specifically funded by the Department of Education. Fourth, some of the local educational authorities, the vocational education committees, engage in or sponsor research and this activity is in part funded by the Department of Education. Fifth, the Institute for Public Administration has engaged in research (eg on civics education) in areas where education and the general needs of society overlap. Finally, certain special committees (eg that evaluating the intermediate certificate examination) are funded to enable them to commission research on the topics relevant to their mandate.

Certain elements of co-ordination are at present exercised by an internal committee of the Department of Education concerned with allocating the research grants mentioned above, as many of the agencies in question seek part of their funds for specific projects from this committee. Plans for reviewing, expanding, and improving the co-ordinating mechanisms are under active consideration.

A number of pilot projects on curriculum development have been established in schools, and it is hoped to use them as models for the study of the implementation of curriculum reform. These projects included a study of an integrated environmental studies programme in a number of second level rural schools and a number of special curricular programmes for urban disadvantaged pupils.

A curriculum unit comprised of inspectors from the primary and post-primary sectors of the Department was established in the Department of Education in 1976. Among its objectives are the reviewing and evaluation of existing curricula. Some research has already been done into the teaching of mathematics, Irish and physical education in the primary sector. The unit has also co-operated with outside bodies in the promotion of pilot projects on curriculum development in post-primary schools.

Institiùid Teangelaiochta Eireann (the Linguistics Institute of Ireland) is an independent body established and funded mainly by the Department of Education to promote the development of applied linguistics and to carry out research into all aspects of language, language learning and language teaching, with special reference to the Irish language, but with reference also to modern European languages.

2.2 Expenditure

An annual estimate is made of the proposed expenditure on research and development from departmental funds. This estimate does not include such expenditure on research and development as the various agencies and universities cover from their own or external funds.

2.3 Priorities

In considering this question of priorities and the development of priorities, the autonomous or semi-autonomous nature of bodies which mainly engage in educational research, particularly the universities and the Economic and Social Research Institute, must be taken into account. The position is that the Department writes each year to the universities and other relevant agencies and invites them to submit projects for financial support. These bodies decide for themselves which projects, if any, they are interested in at that time and apply for support for these projects. The Department then decides which projects it intends to support and the extent to which it is in a position to support each project. In the case of the educational research centre at St Patrick's the basic budget is met from departmental funds. The centre decides which research projects it wishes to carry out and may, if it so desires, ask the Department for additional funds for particular projects as well as seeking outside funds. Hence the decisions regarding priorities are reached on a decentralised basis. On occasion the Department may indicate informally that it would wish to see some research done in a particular field; it would then be for a particular university department or other agency to decide whether it would wish to and were in a position to engage in research in such an area. It is fair to say that such informal arrangements have on occasion resulted in significant and relevant research activity.

The establishment of Institiúid Teangeolaiochta Eireann (referred to above) was an indication of the priority given to research and development in matters related to the learning and teaching of modern languages, particularly the Irish language the revival of which is a major aim of the state. The decision to set up the Institiúid was a governmental one, put into effect by the Minister for Education. While the function of the Institiúid is to carry out research and collect information on all aspects of linguistics and language teaching, the Institiúid is free to select its own research projects and areas of operation. Projects carried out to date or at present in progress have had to do with such matters as the impact of new language courses and methods, the oral testing of language (Irish and French), error analysis, the impact of second-language-medium schools, matters affecting language attitudes, language ability and language use. Since the Institiúid did not come into effective operation until 1974, it is as yet too soon to say how this research has affected the fields concerned.

In general the Department of Education gives special attention to the need for making the teaching of Irish more effective in the schools. Courses in oral Irish in primary schools have been revised and updated in regard to content, methodology and teaching aids. Furthermore, in conjunction with Institiúid Teangeolaiochta Eireann the Department of Education has done oral testing in Irish on a random sample of pupils in the 11-12 age bracket during the school year 1977-78 and results are being processed at present.

2.4 Dissemination of information

In considering this question, the relatively small scale of the country needs to be taken into account. For this reason informal procedures have a higher probability of being an effective means of dissemination than they would be in a larger country. The main means by which research information is disseminated amongst researchers and teachers and administrators is by publications and through professional channels and seminars, for instance a report on research done in the teaching of mathematics in primary schools during the school year 1976-77 was published by the Department of Education and distributed to colleges of education and teacher centres and to teachers on request.

The research centre in St Patrick's, Drumcondra, publishes a journal "The Irish Journal of Education", twice a year, in summer and in winter and in addition to that publishes individual monographs. The Economic and Social Research Institute has a well established series of publications of research results. The Department of Education publishes a journal, "Oideas", four times a year in which significant educational research developments and studies are drawn to the attention of teachers. The Department of Education also covers all or part of the cost of publication of selected monographs through its grant system. In addition to the normal professional channels, dissemination is achieved by means of seminars and lectures given by researchers and interpreters at twenty teacher centres situated at key points around the country. These centres are used for a wide variety of seminars, lectures and discussions and are so situated as to be convenient for a high percentage of teachers to avail themselves of their facilities. They also provide an opportunity for researchers to get some feedback from teachers and other interested members of the public.

The collection and dissemination of information on linguistics and language teaching is an important function of Institiúid Teangeolaiochta Eireann. In this connection the Institiúid has been designated the national information centre for Ireland in a European network of such centres set up as a result of a resolution of the Council of Europe and of the Ministers for Education in 1976. The Institiúid publishes an information bulletin (Teangeolas) twice yearly and distributes it free of charge to a wide circle of readers. It also provides a library and information service whose function it is to collect all relevant information from both foreign and native sources and to make such information available to researchers and teachers. The library contains a wide range of specialised books, journals, documents and microfiches. Interested persons may register as readers and if unable to visit the library may use the postal reader and copying services. Registered readers are kept informed about new materials by the regular issue of acquisition and bibliographical lists. In addition lectures, conferences and seminars aimed at specialist groups of researchers or teachers are promoted or supported. The proceedings of such functions as well as reports on projects carried out are usually published and copies made available to the Department of Education and to other interested parties.

2.5 Impact of educational research on educational development and innovation

Where research findings in particular subject areas are judged to be valuable these are incorporated into the relevant syllabuses by representative subject committees. In most cases the revised syllabuses incorporating new ideas have proved successful, sometimes with minor adaptations, and revitalised the work of the classroom. Only rarely have innovations had to be discarded.

3.2 Intensified European co-operation

Arrangements are in hand to enable the education research centre, Drumcondra, to contribute suitable items to the EUDISED system.

LUXEMBOURG

1. THE ROLE OF EDUCATIONAL RESEARCH

1.1 Special characteristics of the Luxembourg educational system affecting the role of educational research

Educational research in Luxembourg has up to now no official status. There are, however, three centres involved in educational research. The Centre of Educational Research (CRP) of the Ministry of Education set up in 1976 to help in the reform of the educational system. The Educational Institute (Institut Pédagogique) - a teacher education college for primary school teachers - of Walferdange has been engaged in educational research for the past 10-15 years; it has been concentrating on problem-solving research. The University Centre of Luxembourg is also doing some educational research.

1.2 Co-operation between researchers and decision-makers

Due to the lack of official status for educational research, there is no systematic and permanent co-operation between educational research workers and decision-makers. It is hoped that decision-makers will profit from CRP publications as well as from the publications of the other institutions engaged in educational research. Since its creation the CRP is regularly invited to certain important meetings where decisions about educational reforms are discussed. There is, however, no legal basis for this participation. It depends on the goodwill of decision-makers.

1.3 Co-operation with teachers, administrators and parents at the local level

Research workers and teachers co-operate fairly closely. The involvement of the CRP in experiments, innovation and research projects requires the active participation of teachers in various capacities. A teacher may become either responsible for a whole project or study, a co-ordinator of research units within an institution, or a member of a task group in a research unit.

1.4 Contribution of research to classroom reform

The value of CRP projects is to be measured against highly pragmatic and realistic educational concerns. It is for this reason that work centres around classroom events: the adaptation of curricula to present social needs; the updating of curriculum contents to the latest developments in the various disciplines; the modernisation of teaching and the improvement of teacher training reflect this interest.

1.5 Main obstacles to greater impact of research on the classroom

The rigidity of present school curricula leaves only little room for educational (pedagogical) experiments. A draft bill therefore provides the possibility of introducing educational (pedagogical) innovations, thus increasing research impact.

Another obstacle lies with teacher education: so far most of the teachers have not been trained to use research methods. Here again changes are now taking place at the level of both the University Centre (responsible for training secondary school teachers) and the Educational Institute (responsible for training primary and pre-school teachers). The CRP for its part is organising research training seminars mainly for the purpose of introducing participants to statistical methods, electronic data processing and methodological problems.

The main obstacle certainly is the teachers', parents' and politicians' lack of confidence in educational research. It seems that this is partly due to the fact that research undertaken so far has not been very relevant to practice; its results have not been applicable to educational and political practice. This consideration was one of the main reasons for the creation of the CRP in 1976; it still guides its work in educational research. Three years are not enough, however, for saying anything about obstacles the CRP might come across.

1.6 Research workers and educational experiments

The CRP has a very liberal policy regarding educational experiments. In reality it actively promotes them. The institution is thus highly concerned with experimenting with teaching methods that favour the creation of the most appropriate activities relative to a given academic subject. It is also concerned with the experimentation of new evaluative strategies, the search is for evaluative instruments that allow not only quantitative measures, but that are also "formative" - that is, that they facilitate the diagnosis and advancement of students as regards specific subjects. Experimenting also takes place in the elaboration of basic programmes (applicable to all students), to additional programmes (designed for fast learners), and to support programmes designed to alleviate learning problems among pupils in general or among certain types of pupil. Interdisciplinarity is also another area of experimentation.

1.7 Familiarisation of students and practising teachers with educational research

The CRP organises several types of activity, attempting to enhance the familiarisation of students and practising teachers with educational research. These include seminars, training days and colloquies. Training programmes are offered to teachers and students where they can work on their thesis or engage in some of the activities of the Centre. Links have been established with various other centres engaged in educational studies and training. The units of educational research are formed in co-operation with the CRP and function accordingly. Their objectives include:

- responding to educational needs within institutions;
- establishing exchanges amongst teachers of the same discipline;
- facilitating interdisciplinary exchanges;
- testing the didactical units proposed by teachers;
- experimenting with new teaching methods.

1.8 Rationalisation and cost-efficiency

Financial allocations for research in general and particularly educational research are quite limited. The economic situation requires cost-efficiency.

Since educational research enjoys no official status, it is very difficult to analyse cost-efficiency.

Two draft bills envisage including educational research activities: one of them with regard to the education of future teachers and the other one with regard to continued education of teachers in service. It is planned to introduce the possibility of making educational research activities part of teachers' normal tasks. This policy would imply a considerable increase in the educational research budget as a whole with its repercussions in particular on funds set aside for teaching posts and running costs of educational institutions.

1.9 Role of educational research at post-secondary level

Two draft bills provide for including educational research activities into initial and continued education of teachers, attributing great importance to research training.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

The aims of the Centre of Educational Research (CRP) are the following:

- to optimise efforts accomplished by the teachers in regard to children's interests;
- to update curricula according to the needs of society;
- to organise and enhance teacher training; to make teachers engage in applied educational research and to organise teacher exchange among different institutions and different levels;
- to propose innovations with regard to structures, curricula and teaching methods.

The Educational Institute at Walferdange is responsible for special care programmes but also participates along with other centres in wider projects and has contributed to developing information networks at the state data base (Centre Informatique de l'Etat - CIE).

The CRP has established close co-operation with the CIE. Following a CRP initiative, the CIE has acquired (in 1978) the Statistical Package for the Social Sciences (SPSS) which is an integrated computerised data programme, offering easy access to non-specialists. The impact of this initiative on the work of the CRP and the Educational Institute as well as on the theses submitted by teacher trainees is already felt.

At the level of computerisation of data a circuit has thus been set up which includes not only the CRP, the Educational Institute and the CIE, but also the Information Service of the Ministry of Education and the Central Agency for Statistical Data and Economic Studies (Service Central de la Statistique et des Etudes Economiques - STATEC).

These research centres operate with total autonomy from each other. Each one is responsible for the planning of its own research priorities, developments, contracts and policies. This situation seems to result from the lack of official status for educational research. This means that research is often done in a diffuse way and depends too much on the decision of the institutions' directors. Research workers and decision-makers have now become aware of the need for more systematic educational research for improving its status and for institutionalising circuits of communication. Already all projects or requests for studies and research concerning the educational system are submitted to the CRP for advice.

If a research project has been accepted, the CRP grants financial and staffing support to facilitate its implementation, the CRP assists in this way in particular with several studies undertaken by the Educational Institute. This means that some co-ordination and planning of educational research is beginning to take place through the CRP.

2.2 Expenditure

It is difficult to estimate educational research expenditure, since several budgets are involved:

- the budget of the CRP;
- part of the budget of the Institut Pédagogique and of the University Centre;
- part of the budget of the state data base (CIE);
- part of the general budget of the Ministry of Education.

The CRP is to prepare an estimate of contributions from these various budgets during the course of 1979.

2.3 Priorities

Short-term and medium-term priorities have been defined. What matters is to study the crucial points of the present educational system in order to develop appropriate reform strategies:

- How to prevent and remedy socio-cultural handicaps at pre-school level?
- How to prevent and deal with learning difficulties in the first two years of primary education?

The CRP and the Educational Institute co-operate closely in undertaking most of these studies.

The CRP is engaged in the following studies:

- diagnosis and evaluation of what has been learned at the end of primary education (sixth year);
- development of and experiments with new contents and methods and their evaluation at the level of 12-15 years;
- evaluation of supporting activities (pédagogie de soutien) at the level of the 12-15 year age group.

The Educational Institute is carrying out a study on:

- problems of pupils in supplementary education, ie those pupils who have to stay behind in primary education, because they have not passed the admission examination to secondary education (giving access to the 7th class or grade).

2.4 Dissemination of information

Several series of publications are brought out by the CRP such as working documents, work reports, teaching materials, booklets on innovations, evaluations and methods. The first of these publications is geared towards international exchange of information. The second intends to inform and invite the local educational community to participate in the work done by the CRP. The third aims at disseminating the information on newly elaborated material at local and international level as well as creating a multi-disciplinary approach to specific subject teaching. The last three aim at disseminating and promoting the new findings.

The Educational Institute publishes a newsletter (Courrier de l'Education nationale) and technical reports.

3. FUTURE DEVELOPMENTS

The need is felt to grant legal status to educational research in Luxembourg and to come to a coherent overall programme of educational research.

3.1 Trends

The trend is towards creating a National Institute of Educational Research which would no longer be part of the Ministry of Education. An autonomous institute of this kind would have to

- carry out fact-finding studies;
- control small-scale educational innovations (contents, methods, structures);
- help with the introduction of large-scale educational reforms.

It would have to co-ordinate all educational research activities in Luxembourg, promote co-operation among the different national institutions involved as well as with institutions abroad and carry out or commission educational research work. It would help to prepare agreements between the ministry and the institutions in question about research priorities and propose pilot experiments to the ministry.

3.2 Intensified European co-operation

The various institutions mentioned (the CRP, the Educational Institute, and the University Centre) each maintain their own working relations with universities and research centres abroad, in particular in Austria, Belgium, France, the Federal Republic of Germany and the United Kingdom.

The CRP has established close bilateral contacts with a certain number of institutions abroad such as

- Zentrum für Schulversuche und Schulentwicklung (Centre for School Pilot Experiments and School Development) in Graz (Austria);
- Institut für Praxis und Theorie der Schule (Institute for School Practice and Theory) in the Land of Schleswig-Holstein;
- Pädagogisches Seminar der Universität Köln (Department of Education, University of Cologne);
- Institut für Pädagogik der Naturwissenschaften (IPN, Institute for the Teaching of Natural Sciences) in Kiel, Schleswig-Holstein;
- Centre de recherche et d'étude pour la diffusion du français (CREDIF, Research and Study Centre for Promoting French Language) at St. Cloud, near Paris.

Studies and research projects are often undertaken on the basis of co-operation agreements with these institutions.

There are also relations with other institutes, in particular

- the Institut National de Recherche Pédagogique in Paris;
- the Département de l'Organisation des Etudes du Ministère de l'Education Nationale et de la Culture Française (Research Department of the Ministry of Education and French Culture) in Belgium;
- the National Foundation for Educational Research (NFER) in the UK.

but there are no joint projects in these cases.

The CRP is also involved in educational research meetings organised by UNESCO and the Council of Europe.

It is the policy of the CRP to come to agreement about concrete joint projects with research institutes abroad.

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the national education system which affect the role that educational research plays in it

Under the Dutch constitution, the school system enjoys a considerable degree of freedom as far as aims (specific educational goals) and methods (teaching and testing methods, teaching aids) are concerned. Legislation defines educational aims, and therefore the prescribed curricula, in only the most general terms. As a result, decisions on the need for educational research oriented towards practical requirements and on the impact this may have are made by school governing bodies and teachers' associations. The State has relatively little influence on these matters, although it is responsible (through the Minister of Education and Science and the Minister for Science Policy) for the secondary conditions under which the national educational research organisation operates.

In a sense, educational research in the Netherlands takes place on an open market and the Educational Research Institute (S.V.O.) sees its task as bringing together the various parties concerned. It strives to link the demand for educational research from the scientific sphere, from the practical teaching sphere and from national education policy to the available national research capacity, and vice versa.

1.2 Co-operation between researchers and decision-makers

In recent years the Minister of Education and Science has increasingly endeavoured to base certain types of policy decision on the results of educational research. This has been particularly true in the case of innovation experiments introduced throughout the country in primary education, comprehensive secondary education and open school (non-formal) education. In all these cases specific educational research budgets were earmarked,and the S.V.O. was requested to make recommendations on how the money should be spent.

Policy research projects and national experiment-oriented research projects now comprise approximately 40% of the total S.V.O. turnover. However, this does not necessarily mean that there is a great deal of co-operation between researchers and decision-makers. It is even debatable whether this is possible as policy development is subject to many influences which are more powerful than the results of research. Moreover, it is often necessary to interpret a research report to a certain extent before it can be used as a basis for policy recommendations. The approach to policy-oriented educational research (but not its importance) is the subject of continuing discussion, in which the views of the Ministry and those of S.V.O. do not always coincide.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents

It is by no means common for researchers to co-operate with teachers, administrators and parents in the development of education at local level. There are two reasons for this.

The Dutch educational research organisation is part of a national support structure for education. Within this structure the research, development (curriculum development, test development), dissemination and consultancy sectors are carefully separated at both policy-making and administrative levels. The researcher does not easily come into contact with educational government. Local development comes under the national educational centres and the local and regional educational supervisory services. These institutions do not carry out research themselves but they are expected to have a scientific approach. Statistical values and test standards play an important part in their consultancy work.

Action research is still a relatively small part of the total work of the S.V.O., although its policy is to promote growth in this sphere. An example of this type of work is the Innovation Project Amsterdam which has been running for some years and on which the S.V.O. has collaborated with the private Bernard van Leer Foundation. The final reports on this project are to appear in 1978. The S.V.O. has authorised an external evaluation of the project, to be completed by late 1979, the merits and methodology of action research concepts will receive special emphasis in this evalution.

A second example of the S.V.O.'s action research activities can be seen in a number of R&D projects on curriculum development and evaluation which are being jointly promoted with the National Foundation for Curriculum Development (S.L.O.). A third example is an S.V.O. experiment with "school-oriented researchers" in experimental schools who are working on direct feedback to school consultancy services.

1.4 Contribution of research to reform in the classroom

Research makes many contributions to reforms in education, most of which are long-term and occur as a result of diffusion rather than direct application, for example changes in the methods of teaching and learning of arithmetic/mathematics and language, internal differentiation among pupils and in classrooms and innovations in primary education. The S.V.O.

is attempting to improve productivity by giving more emphasis to practical relevance in the assessment of research proposals, by giving teachers and researchers the opportunity for discussion in drawing up research proposals (negotiated research) and by the organisation of central scientific information services.

1.5 Main obstacles of greater impact of research in the classroom

The main obstacles which prevent research from having a greater impact seem to vary considerably and include:

a. the continuing relatively weak position of the social sciences;

b. the paradox of the accent on practical research at the expense of so-called irrelevant theoretical research, which in fact endangers the formulation and testing of hypotheses and the ability of research to generalise in the long-term and thereby also endangers the quality and significance of that same practical research;

c. the jargon used by many social and behavioural scientists;

d. the fact that research (notably evaluation research) is sometimes seen by policy-makers and teachers as a threat;

e. the lack of co-ordination in programming research projects (see the English language version of the forthcoming S.V.O. memorandum Programming Educational Research);

f. the credibility gap which has arisen as a result of expectations for the social sciences in the sixties following the post-Sputnik boom in the sciences; in the seventies, due to insufficient insight into long-term impacts, a certain degree of cultural pessimism (eg on the issue of equal opportunity) and the fact that the social sciences cannot really be compared with science and technology, have meant that these expectations are not being realised. Moreover, the departmentalisation of the national educational support structure mentioned in 1.3 could also be an obstacle. International comparative evaluation research would probably shed more light on this aspect.

1.6 Researchers and educational experiments

See answer to 1.2. There is a strong involvement of researchers with the large-scale national innovation experiments supervised by the Minister.

Practical results of these newly-introduced innovation experiments are not yet available.

1.7 Familiarisation of students and practising teachers with educational research

So far neither students nor teachers have been systematically involved in educational research. Little emphasis is given to educational research in the curricula of teacher training institutions or in refresher and additional training courses for teachers. As far as practising teachers are concerned, inadequate scientific advisory services and the obstacles mentioned in 1.5 also play a restrictive role.

1.8 Rationalisation and cost saving through research

The extent to which research has contributed to rationalisation and cost saving in education is difficult to assess, but impressions are that the contribution is minimal. For instance, there has been no breakthrough with respect to large-scale educational technology and available research data do not suggest that a break-through of this type is imminent.

1.9 The role of educational research at post-secondary level

The impact made by educational research at the post-secondary level is weaker than at other levels. Traditionally, the universities have seen this as an autonomous sector which they have claimed for themselves. The research institutions of their own which they have set up, have, however, been less concerned with research than with teacher and faculty consultancy. For financial reasons the Minister has no opportunity for promoting a national research programme for higher education. The S.V.O. has few higher education research projects.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research and development

The Educational Research Institute is concerned with financing, promoting and supervising educational research. It does not undertake research itself but acts as a national agency, contracting out and co-ordinating research programmes and projects actually carried out by nine research institutes belonging to universities or university level organisations (S.V.O. subsidiaries). The Minister of Education and Science is politically responsible for these activities. He is also responsible for final decisions with regard to research projects connected with large-scale educational experiments conducted at national level; the S.V.O. acts in an advisory capacity with respect to these projects.

The S.V.O. has developed a strategy of long-term research programming for the planning and co-ordination of projects which is at present in the "try-out" phase (see the memorandum entitled Programming Educational Research).

All finance comes from public funds; some of the money is spent independently by the universities as part of their own budgets without prior earmarking (source I). In addition, the Minister makes an annual lump-sum grant to the S.V.O. (source II). The Minister also makes separate budgets available to the S.V.O. for policy-oriented and experimental research (source III, see 1.2).

Finally, the S.V.O. is trying to diversify its sources of finance by seeking subsidies from private organisations and corporations (source IV), but as this is a recent move its chances of success cannot yet be assessed.

2.2 Expenditure

The S.V.O. spends 25 million guilders annually from sources I and II (see 2.1), which represents approximately 0.1% of total educational expenditure. This amount will drop considerably in the coming years as a result of cuts in government spending. No detailed figures of expenditure as part of university budgets (source I) are available, but the impression is that these amounts are insignificant in comparison with sources II and III. Source IV has yet to be exploited.

2.3 Priority fields

The area of policy and experiment-oriented research has been promoted already.

The area of theoretical programmes on specially selected topics and themes, carried out by research workers throughout the country, which show promise of a high research yield will shortly be promoted. Working communities of research workers are being set up per theme (forum convergence).

For information concerning the reasons for establishing these priorities as well as the methods used to enact them, see 1.5.

The people involved in these decisions were the Minister and the S.V.O.

The measures used to promote research and documentation are: programming devices, management procedures and financial reallocation. These measures have not affected the fields concerned in a way which permits evaluation.

2.4 Dissemination of information

The educational research information is disseminated by the S.V.O. department for documentation (EUDISED system). Administrators and teachers are made aware of relevant educational research findings by incidental publications and by systematic information and publications issued by the S.V.O. department of information. The feedback from researchers, administrators and teachers to the main educational research organisms is still in its infancy; the S.V.O. department for documentation develops standard procedures and supervises documentation flow.

The dissemination of information to the public at large and specific groups is done as yet only to a very small extent; the S.V.O. is endeavouring to promote the popularisation of research reports.

2.5 Impact of research on educational development and innovations

No particular strategies; explanation: 1.1, 1.2 and 1.3.

Reliance on diffusion processes and dissemination-by-information.

3. FUTURE DEVELOPMENTS

3.1 Trends and new measures

The dominant factor at the moment is the anticipated drastic reduction in government expenditure on educational research (and the simultaneous reduction in the S.V.O. budget).

This gives rise to the question whether the present structure of educational research can be maintained in the future. The State Secretary for Education and Science responsible for this matter recently set up a working party within the Ministry to look into the issue and to chart policy options. The general director of the S.V.O. is attending the working party's meetings as an observer. The S.V.O. too is in the process of reviewing its research policy.

NORWAY

1. THE ROLE OF RESEARCH

1.1 Special characteristics of the Norwegian education system which affect the role that educational research plays in it

The last 20 years have been a period of major reforms at all levels in the Norwegian educational system: primary and lower secondary education within the framework of an extended system of compulsory education, general and vocational education at the upper secondary level moving towards more integrated institutional structures, higher education also developing basic new structural features, and adult education more rapidly expanding than any other part of the system. These reforms have sprung out of a political will and political agreement rather than from educational or social research.

Research has a role to play, to be indicated below. It should be noted, however, that the strong move in recent years towards more decentralisation of decisions within the educational system has also meant that far more than before research is conducted in close collaboration with practitioners at various levels within the educational system. Research efforts aiming primarily at influencing decisions at the central policy-making level, for further dissemination downwards within the system, are currently seen as less relevant than research and developmental work conducted in close connection with practice in the field.

1.2 Co-operation between researchers and decision-makers

An important role in the preparation of educational reforms is performed by ad hoc commissions, on which researchers are often invited to serve. Such commissions also regularly maintain close contacts with relevant research milieux and make extensive use of their findings.

Extensive pilot experiments often precede major reforms, and researchers take an active part both in designing the experiments, advising on their implementation and evaluating their results.

In addition, the Ministry each year invites applications for research projects on the basis of a list of research priorities established by the Ministry. Some 200 projects have been financed by the Ministry in this way, since the Ministry engaged in research funding in 1970. In 1978, the Ministry financed 54 projects of this kind, for a total sum of 4.25 million N.kr.

It should be noted that the Ministry's engagement in research funding is part of a multi-source approach to research policy in this field. Other sources are the research councils and the regular budgets of research institutions. Presumably, the criteria underlying decisions on funding from different sources will reflect somewhat different views on priorities, thus preventing any specific value structure from dominating the research field, and leaving more freedom to individual researchers.

1.3 Researchers' collaboration at the local level with teachers, administrators and parents

As mentioned above, most of the research effort tends to go into projects based on close collaboration between researchers and practitioners in the field. Such projects may take the form of action research, or extensive experiments beyond the scope of any strictly controlled academic research model. Deliberate efforts are made to promote the "horizontal" spread of experience with such projects, without the condition that they should necessarily be sanctioned from above.

1.4 Contribution of research to reform in the classroom

It is difficult to assess the direct links between research and changes in classroom practice. It may be said, however, that recent change tendencies in the latter field correspond fairly well with several research findings, without necessarily being directly caused by them. Such connections can often be most easily seen in the case of practical experiments spreading rapidly from teacher to teacher, school to school, and school district to school district.

1.5 Main obstacles to a greater impact of research on the classroom

The obstacles are many, and it is difficult to assess their relative importance. One might mention the tendency of academic researchers to generate problems within their scientific discipline, which are felt to be less relevant from the practitioner's point of view. This situation is aggravated by the development of a discipline based in group language for researchers, frequently blocking their communication with others.

Relatively weakly developed contact networks between institutions at the local level, as well as traditional organisational structures within institutions, may also act as bottleneck factors.

Finally, many fashionable research problems, as emerging from the prestigious centres of the international research community, may have little relevance for the national situation of a specific country. Although helpful in many respects, the international research network may easily be dominated by values, and corresponding academic rewards, alienating the researchers from the essential problems of their own national reality.

1.6 Researchers and educational experiments

Cf 1.2 and 1.3

1.7 Familiaristion of student and practising teachers with educational research

Both students and practising teachers are increasingly taking part in research teams or experimental groups. In action research projects, practitioners will often carry the project on towards their own solutions, after an initial phase of collaboration with researchers.

Teacher-training institutions play an increasing role in research, and their students often play an active role in the research projects, especially in various forms of action research. There is no doubt that this way of using research as a pedagogical tool has very beneficial effects on the training of future teachers. Measured by more traditional ways of assessing research findings, such projects may not, however, contribute substantially to the creation of new knowledge. Yet, it is increasingly realised that in many respects the creation of new knowledge and its dissemination to wider groups are in fact inseparable. Research and learning becomes interwoven in a way that precludes meaningful distinctions.

1.8 Rationalisation and cost-saving through research

The question presupposes a level of clarification in terms of objectives and their relationship to various means which hardly exists in any educational system. But increased understanding of the educational system and its functions will always offer opportunities for improving the functioning of the system as a whole.

1.9 The role of educational research at post-secondary level

Research related to higher education is one of the weaker points in Norwegian educational research. It would probably be right to say that this represents the educational sector where research has played the least role as regards policy and practice.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

The arrangements for the financing of educational research have been outlined under point 1.2. As to the research grants offered by the Ministry, they are based on an extensive procedure aiming at the involvement of the whole of the Ministry and its various advisory bodies, with strong representation of practitioners, as well as consultants from various fields of research. Through this procedure, a set of widely defined research priorities is generated, and applications from researchers are evaluated and selected for funding.

Beyond this the Ministry tries to maintain close contacts with the various research milieux and particularly the projects directly financed by the Ministry. Conferences bringing researchers, administrators and practitioners together are also arranged by the Ministry, and initiatives within the individual projects to establish wider contacts with practitioners are encouraged and financed as part of the total project budgets. Through such contacts new projects may be initiated, emerging from a continuous dialogue between the various parties concerned. Similar initiatives are also taken by the research councils and individual research institutions.

It should be mentioned that in a small country like Norway, contact with international research is extremely important. Efforts are made to assist individual researchers and research milieux to develop their international contact networks, parallel to those established by the Ministry. Gradually, the ability to select the most relevant and interesting contacts is being developed.

2.2 Expenditure

It is not possible to offer exact estimates of research expenditure in the field of education. To some extent such expenditure is hidden in the general budgets of research institutions. It is also difficult to draw a clear line between research, experiments, development and practical dissemination.

A rough estimate would indicate about 30 million N.kr in the form of direct grants from central and local authorities. In addition, expenditure by research institutions and research councils may amount to about 15 million N.kr. The comparability of such data with those of other countries is, however, very doubtful for the reasons indicated above.

2.3 Priorities

When inviting researchers to apply for project funding from the Ministry of Education, the Ministry established the following priority areas for 1979:

- education at the upper secondary level;
- follow-up of the indicative curriculum plan for basic education;
- education and work life;
- education for minority groups;
- education and equality;
- differentiation and individualisation;
- teaching materials;
- adult education;
- teacher training.

Under each of these points, the Ministry has outlined a series of problems as examples of concern felt strongly by the Ministry. No attempts were made, however, to design specific projects.

The priority list, which should not be taken as a ranking of priority areas, covers fairly large areas of educational research. In addition, projects falling outside these areas are also taken up for consideration and have frequently been funded. The steering effect of such priority statements on educational research must therefore be assumed to be relatively slight.

It should also be mentioned that various advisory bodies to the Ministry have their own funds which are allocated according to their priorities, and this is also true for the research councils and the research institutions.

The procedure leading to the establishment of the Ministry's research proposals have been outlined above.

2.4 Dissemination of information

Descriptions of research projects financed by the Ministry are published annually in journals reaching a large proportion of teachers and others interested in Norway. The same applies to presentation of the findings of completed projects. In addition, research reports are distributed to interested parties, and research conferences contribute towards establishing contact between researchers.

At the project level, reports are published regularly, and publication is financed through the project budget. In addition, other efforts at dissemination are included in the approved budget.

Reports on ongoing research, irrespective of their sources of finance, are collected by the Ministry and communicated to the international documentation service of the Council of Europe. The Norwegian part of this is communicated to all relevant institutions in Norway and is fairly widely used.

2.5 Impact of research on educational development and innovation

The point is largely covered by previous answers.

3. FUTURE DEVELOPMENTS

3.1 Trends and new measures

Innovative and developmental activities at the ministerial level are today spread over the various departments of the Ministry between the councils responsible for basic education, upper secondary education, adult education and generally for innovations in schools. There may be a reason for examining the totality of such activities to discover weaknesses and overlaps. The outcome of such an examination is still an open question.

3.2 Intensified European co-operation

The main thrust for the moment would be towards widening the international contacts for the research field as a whole, avoiding the risk that specific central agencies in charge of international collaboration may come to act as bottlenecks in this context.

As to the content of such collaboration, the priority list established by the Ministry might serve as an approximate illustration of our main areas of concern.

SPAIN

1. ROLE OF RESEARCH

1.1 Special characteristics of the Spanish education system which affect the role that educational research plays in it

In accordance with the General Act on Education and the financing of the Educational Reform (August 1970), the Spanish education system makes provision for educational research as the principal mechanism for innovating and adapting education to changing social needs. To fulfil this objective, a network of Educational Science Institutes (ICEs) was set up, co-ordinated by the National Research Centre for the Development of Education (CENIDE). Subsequently, by a decree of 7 March 1974, the CENIDE was replaced by the National Institute of Educational Science (INCIE), whereby the former agency of the Central Administration became a more flexible autonomous body attached to the Ministry of Education and Science, but having an independent legal status.

The ICEs are structurally dependent on each university within whose district they operate, while functionally they are co-ordinated by or through the INCIE. The INCIE-ICE network has the following functions:

- basic training and refresher courses for teachers,
- sponsoring and conducting educational research of an operational nature,
- guidance and assistance in solving educational problems at the various levels of the system,
- promoting the dissemination, development and testing of innovations.

1.2 Co-operation between research workers and decision-makers

Co-operation between research workers and education administrators is practised to the extent allowed by the organisational structure of the network. At regional and district levels, therefore, the director of each ICE acts as representative of the corresponding university rector and serves as intermediary for relations with the faculties and advanced technical colleges. Other levels of the education system are not, however, directly represented. The need for such a link is making itself increasingly felt, not only for all sectors of the education system, but also for the various social groups and institutions active in each region, although these have no direct relation to the university. A bill on university autonomy is at present being drafted, which is designed to meet this need.

At national level, the INCIE is answerable to the Ministry of Education and Science, which appoints its director, who has the rank of director general in the ministry and participates in the Education Ministry Council. At the request of the education administration, the INCIE takes charge of organising research in fields which, by reason of their scope or specialisation, cannot be tackled by the Educational Science Institutes.

Senior officials of the Education Administration also participate in the project planning and selection committees which deal with national research programmes and the further training of teachers.

Nevertheless, liaison between research workers and educational administrators is not always as smooth and effective as might be hoped.

1.3 Collaboration at local level between research workers and teachers, administrators and parents

Local collaboration between researchers and teachers is stimulated by practical research work in which teachers from different levels of the school system take part each year. The network has had a growing influence in encouraging large numbers of teachers to approach their duties with a fresh and exploratory outlook. Every year, each ICE and the INCIE organise short courses on research methodology in the field of the educational sciences.

Relations with parents are established almost exclusively through pilot and experimental centres which conduct experiments frequently calling for the participation of parents and parents' associations.

1.4 Contribution of research to reform in the classroom

The contribution of research in applying educational reform consists in disseminating the results of each ICE research project to the remainder of the network and to the executive organs of the Ministry, and by means of basic and in-service training courses for teachers. Their contribution has not, however, been decisive in view of the traditional loss of funtional contact between research workers, administrators and teachers.

1.5 Main obstacles to greater impact of research on classroom teaching

Obstacles which prevent research from exercising a greater influence on classroom practice, in addition to those already mentioned, may be described as follows:

- lack of efficient channels for circulating research findings;
- short-term projects leaving no room for experimentation and longer term follow-up research;
- preference is given to descriptive and sociological research and is less frequently centred on the quality of teaching processes in the classroom;
- rigidity of school planning and curricula which fail to stimulate positive attitudes towards change and innovation among teachers;
- excessively bureaucratic system which hampers participation and direct perception of problems.

1.6 Researchers and educational experiments

Current legislation makes provision for a parallel network of experimental centres to test ICE research. In view of administrative problems, however, this network has functioned only partially, there being a gap between research and its application. A development plan has now been implemented (experimentation, testing and application of innovations) for general basic education, with the participation of all the bodies concerned at this level.

1.7 Familiarisation of student and practising teachers with educational research

It should be remembered at the outset that one of the fruits of the network's endeavours has been the creation of a concern for and positive attitude to educational research. The experiments and hypotheses, frequently of a theoretical nature, evolved in university faculties are given a more practical aspect by the multi-disciplinary teams of the ICEs.

1.8 Rationalisation and cost saving through research

The contribution of educational research to rationalisation and cost reduction is particularly obvious in the sociological and demographic studies carried out for the purposes of educational planning in the districts corresponding to each ICE. These research projects are particularly valuable at the moment, when plans are being made for the regionalisation of education.

1.9 Role of educational research at the post-secondary level

As the university reform is still in the preparatory stage, the role of educational research at post-secondary level remains to be seen. This reform will at any rate provide a good test of the effectiveness or otherwise of research as regards planning, for two reasons: firstly, the diversity of ideological standpoints and the great tensions generated by the said reform and, secondly, the considerable volume of research carried out on university themes. Only 30 projects or so have been completed by the INCIE-ICE network.

2. GENERAL FRAMEWORK

2.1 Promotion, planning and financing of educational research

Research planning is carried out at national level through the agency of the INCIE. A supervisory board, whose membership includes senior ministry officials, ICE directors, educational science experts and members of the INCIE, draws up priorities for annual national plans and selects projects submitted competitively by all ICEs. Once the plan is established, the project directors are responsible for its execution, while follow-up work and co-ordination are ensured by the INCIE.

2.2 Expenditure

The sums designated or intended for research in the various official centres - the INCIE-ICE network, the "San José de Calasanz" Institute attached to the Central Council for Scientific Research and the education departments of universities - consist of public funds earmarked in the budgets of the Ministry of Education and Science.

In recent years, public resources destined for functional educational research have been reduced, compared with the budgets of the first plans for making the network operational. The total amount so far invested in all eight plans executed by the network is approximately 225 million pesetas.

2.3 Priorities

Priority themes are drawn up each year by means of a survey among all ICEs which each indicate the research needs in its region; the directors general of the Ministry indicate their preferences from the administration's point of view. In addition, account is taken of educational priorities imposed by the progressive introduction of the reform, by development plans and by other major lines of research recommended in international organisations.

Of the various educational levels, general basic education has been the subject of the greatest amount of research. The most recent projects now in progress tend to give preference to the pre-school sector, regarded as a priority in current educational policy.

2.4 Dissemination of information

The dissemination of research findings takes place at two levels. Firstly, there is internal circulation: all research findings from the entire network are circulated to each and every institute, so that all may consult the work of the others. Similarly, as a follow-up to each plan, periodic meetings of research project directors are held to exchange results and information. Other more restricted seminars are devoted to discussing problems and solutions related to research projects having a similar theme, scope or methodology.

Circulation outside the network is done by sending memoranda and reports to the main administrative and teaching institutions throughout the country. Each institute has a documentation centre where current research may be consulted. INCIE publishes a full annual catalogue of current research, specifying aims, contents, methods, project directors, etc. The dissemination, practical application and development of research are problems which still have not been finally solved, and the INCE is at present working on a development, experimentation and application plan.

2.5 Impact of research on educational development and innovation

It may be deduced from the foregoing section that the impact of research on teaching practice has not been as satisfactory as one would have liked. There is no doubt that the teaching profession assimilates and applies active and creative methods to an ever-increasing extent, largely as a result of a greater concern for rationalisation and scientific method. Between basic and functional research and the practical generalisation of results, however, there is still vast room for the development and application of innovations, and this is currently the subject of a study as part of the aforementioned development plan, in which the following bodies are collaborating: the Educational Science Institutes, the University Teacher Training Colleges for General Basic Education and the experimental and ordinary centres, through the agency of the technical inspectorate of the General Directorate of Basic Education.

3. FUTURE DEVELOPMENTS

3.1 Trends and new measures

New measures are envisaged in educational policy. The education reform will soon have been implemented for ten years. In addition, the far-reaching political changes which have taken place have a determining influence on education. A University Autonomy Bill is now under study which will affect this level of the system directly and other levels indirectly. It is to be expected that the INCIE-ICE network will also undergo changes to adjust to this new legal framework. Meanwhile, a larger measure of educational regionalisation should not raise too many unforeseen problems and should encourage more concern for effective co-ordination. The present structure of the network can continue to provide a valid foundation for applying research policy merely by adjusting to the new autonomy acquired by universities and other sectors of education. In addition, the new situation will stimulate further research activity.

3.2 Intensified European co-operation

The general economic and, above all, cultural crisis and its repercussions on education do not, as has already been repeatedly stated, obviate the need for educational research, but rather makes it more necessary, while at the same time demanding a more economic use of available resources. In Spain, one must remember that, in addition to the said crisis, there have been profound changes of all sorts; some of these may be said to be revolutionary, still under trial and likely to continue in the foreseeable future. This means further demands in educational research, as in the field of the social sciences in general. For these activities and for Spain as a whole, European and international co-operation and information continue to be of great importance. More specifically, and with particular regard to the Council of Europe, Spain is prepared to collaborate in current projects. It is keenly interested in collaboration with a view to developing the EUDISED activities and would support a proposal to resuscitate the former Education Research Committee. The new structures with which it has been replaced are however interesting, but we think that the role which can be played by a permanent committee on research and educational development has both greater scope and depth.